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AUTHOR Tickton, Sidney G.; And Others
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ABSTRACT

Information is presented on activities that colleges and universities are undertaking to recruit and retain promising young faculty members. Educators were asked to nominate appropriate programs, and certificates of achievement and cash awards were made to 10 of the 115 universities and colleges submitting information. The efforts of the 115 schools are briefly described in terms of the situation of the campus; the innovative idea for recruiting/retaining qualified, young faculty members; and the results of the program. Citations that were read for each institution receiving awards are included. In addition, a sample of the ideas are discussed in six separate chapters, which include a brief statement of the approach and results for each institution. These include the following: creating new job opportunities, developing innovative employment policies, increasing research opportunities, filling faculty positions in engineering, and providing housing incentives for faculty members. Additional ideas include: providing fellowships, sabbaticals, teaching and research assistantships; and offering salary supplements earned by teaching in the summer or during off-hours. For each institution, a contact name, address, and telephone number are supplied. An appendix includes projections and analyses of the employment outlook for faculty. Excerpts are included from the "Report of the Commission on Graduate Study at the University of Chicago," including three informative charts, one from a report by the Carnegie Foundation for the Advancement of Teaching and two from a report by William Bowen in his president's report for Princeton University. (SW)

1982 Idea Handbook

Attracting and Retaining Highly Qualified Young Faculty Members at Colleges and Universities

A compendium of innovative approaches, practical ideas, and notable programs

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By **Sidney G. Tickton**
And Members of the Academy's Staff

Prepared with the support of the Atlantic Richfield Foundation

Academy for Educational Development
Washington, D.C.

October 1982

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The Academy staff responsible for carrying out the project and preparing the handbook were:

Sidney G. Tickton
Academy Vice President

Stephen Barkanic
Program Associate

Renee Trent
Administrative Assistant

Judith T. Irwin
Program Assistant

Davis Jenkins
Project Intern

The 1982 Handbook for Colleges and Universities was designed by Timothy Ward, Washington, D.C.

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1982 Idea Handbook
Attracting and Retaining Young Faculty Members at Colleges and Universities

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Foreword

For many years the lush green campuses, the quiet scholarly atmosphere, the intellectual challenge, and the relative economic security have induced a substantial number of gifted young people to start their professional careers by teaching at colleges and universities. Many of the "brightest and the best" stayed on to build for American higher education a faculty of unsurpassed ability and quality, and to provide for the nation a volume of teaching, high quality research, and scholarly endeavor not matched earlier in the country's history.

Today, with a growing tightness of funding for higher education on the one hand, and the great employment appeal of the corporate world on the other, young people are being directed away from teaching and into non-academic pursuits. As a result, higher education leaders are faced increasingly with the problem of how to attract gifted young people to their faculties and how to retain them once they are there. This is no small challenge because:

In such disciplines as the arts, the humanities, and many sciences:

- The total number of faculty positions is dropping and the trend is expected to continue downward for some time.
- Little or no change is expected in the number of positions held by older faculty members. Therefore, the drop in employment will be concentrated principally among the younger people.

In such disciplines as engineering, business administration, management, and computer science:

■ Industrial and commercial firms in all sectors of the economy are paying persons filling junior positions at salaries far above academic levels. Although there has always been a difference between academic and corporate pay scales, the disparity now is greater than heretofore; in addition, at the present time, academia offers new faculty members rather poor prospects for long-term economic security.

It is against this background that the Academy for Educational Development asked the Atlantic Richfield Foundation to support a fact-finding project that would assemble information on the activities that colleges and universities are undertaking to recruit, nurture, and retain promising young faculty members. When the Foundation agreed to this proposal, the Academy invited educators throughout the country to nominate appropriate programs, and then asked the nominees to submit a program entry form answering in essence the following questions:

What was the problem you faced?

What was the idea adopted?

What were the results achieved?

To give recognition to the most noteworthy efforts, if only in a modest fashion, the Academy issued Certificates of Achievement and made cash awards of $5,000 each to ten out of the 115 universities and colleges submitting

information. The Atlantic Richfield Foundation provided the funds for the awards which were made to institutions selected by a small panel of distinguished educators who reviewed the materials submitted. Members of the panel were:

Alvin C. Eurich, *President*
Academy for Educational Development

Robert Gale, *President*
Association of Governing Boards of Universities and Colleges

Gladys Hardy, *Program Officer in Charge*
Education and Cultural Affairs, Ford Foundation

T. Harry McKinney, *Professor*
College and University Administration Programs
Michigan State University

Jack Peltason, *President*
American Council on Education

Ruth Weintraub, *Senior Vice President*
Academy for Educational Development

The certificates of achievement and the awards were presented to the winners at a dinner ceremony at the St. Regis Hotel in New York City on June 2, 1982.

The Academy uses the publication of this report on the project as an opportunity to thank the Atlantic Richfield Foundation for its support and to express appreciation to the hundreds of higher education administrators and

faculty members who provided information about programs at their institutions. At a time when higher education is under pressure from all sides, these educators showed by examples from their own colleges and universities that with ingenuity and foresight, dedicated people can help nurture the future well-being of the entire higher education enterprise.

Introduction

This handbook is directed to the question of what colleges and universities are doing about one of the serious problems confronting higher education in the 1980s and beyond; that is, the prospective decline in the number of faculty positions held by young people.* Despite its prospective severity, the problem is not one that jumps out at college and university trustees working on major policy issues or at legislators concerned with higher education appropriations. Nor is this a problem that is likely to stand at the forefront of the agendas of higher education administrators and department chairpersons beset by the daily battle with the budget, frustrated by the lack of flexibility resulting from growing percentages of faculty on tenure, or hemmed in by personnel restrictions arising out of employment policies agreed to under circumstances far different from those that exist today.

Nevertheless, the problem of the decline in the number at the younger end of the faculty roster is a matter of concern to many educators and a matter of action by only a few. The Academy's purpose in making the study supported by the Atlantic Richfield Foundation has been to find out just what the few persons have been doing to address the problem and to describe their activities, briefly, in this report.

This, then, is a book of examples of various institutions' programs. It was put together because the Academy found that, apart from an occasional featured news story or magazine article, almost no ready information exists about

**Comments on the employment outlook for young faculty members are in the Appendix to this report.*

programs designed to recruit and retain gifted young faculty members. Little was known about the nature of the programs, their methods, or their results. Even knowledgeable people in higher education seemed to be acquainted with only one or two programs, and they often lacked up-to-date information about those.

The examples in this handbook describe what 115 colleges and universities have done to recruit and retain promising young faculty members, how they did it, and the results. The Academy hopes that the examples will help higher education leaders to understand better what can be done. Many of the ideas in this report can be used within current budget allotments; some obviously require foundation funding. However, all of the ideas described have one common theme; that is, each has worked or is working now at some college or university.

In reviewing the examples sent in by the colleges and universities responding to the Academy's questionnaire, the Academy staff was interested to note that a number of the steps taken by some of the institutions reporting did produce significant results. However, as we read the entries, we were disappointed to observe that for the nation's higher education system as a whole (now consisting of more than 3,000 institutions and numerous off-campus locations) not enough is being done to maintain the flow of fresh, enthusiastic young people into the faculty stream and to retain them. Because of budget limitations across the country, we as a nation are running the risk of clipping a whole generation of young people out of the

college and university teaching and research staffs. If this occurs, the intellectual as well as the social and cultural fabric of the nation will be impaired.

This handbook is presented in three parts:

The Idea Sampler describes a selected sample of ideas submitted to the Academy, organized in six chapters representing categories of innovative approaches most effectively used by the institutions reporting.

The Award Winners lists the citation read for each institution receiving a certificate of achievement and the cash award.

The 115 Entries summarizes briefly for each institution the information submitted to the Academy either on the questionnaire or subsequently by telephone and lists the contact person for each program from whom further information can be obtained.

Notes on Using the Handbook

The staff points out, as it has with other handbooks published by the Academy, that neither the Academy for Educational Development nor the Atlantic Richfield Foundation is providing a prescription for any particular institution, nor offering any specific advice, nor recommending any specific program. All this report says to the educators and managers of higher education institutions is:

> A number of good ideas, some new, some old, have enabled colleges and universities to increase or improve opportunities for young faculty members.

Examine these ideas, find one that could be used at your institution, and then adapt it to meet your needs.

A few caveats are noted:

Ideas in practice included in the handbook are those that officials chose to submit; therefore, the handbook is not all-inclusive. It is, and is meant to be, only a book of examples.

Descriptions are brief rather than comprehensive. Interested people can follow up on ideas that might prove useful at their own institutions.

Although the text of this handbook has been reviewed for clarity, the staff did not attempt to document for accuracy all the information submitted by the institutions reporting.

The omission from this handbook of colleges and universities with effective programs for recruiting and retaining young faculty signifies only the fact that no information was reported by those institutions to the Academy. Knowledgeable persons mentioned at least another 100 institutions, in addition to those included in the handbook, as having notable programs for recruiting and retaining young faculty members.

With these notes, we send the handbook to college and university administrators with the hope that the ideas described will be helpful as they face the challenges of the Eighties.

The Idea Sampler

Part A

Ideas on Creating New Job Opportunities

Chapter 1

The Situation

Today tight budget allotments in the liberal arts and sciences as well as limitations or even freezes on the hiring of new faculty and the heavy percentage of faculty on tenure are combining to prevent universities and colleges from bringing on to their rosters as many new young faculty members as they need to stimulate and invigorate their institutions. The prospects for a change in the situation are not likely to improve unless and until higher education management takes positive action to open up opportunities for the employment of gifted young people.

The Challenge

To develop some creative ways to establish positions that can be filled by young highly qualified people without disrupting the established personnel policies of an entire university or college.

The Ideas

Three approaches to meeting the challenge are:

To enable persons holding academic positions to shift into new academic activities, new disciplines, or new fields of study. These usually involve providing opportunities for studying and gathering expertise in new subject matter, or for developing new skills.

To retrain persons in academic positions to fill jobs in business and industry and, if necessary, provide mid-career counseling (when this is required to enable faculty persons to move into new activities in non-academic fields).

To open up academic positions for young people to encourage existing faculty members to retire early. At most institutions the retirement of a senior professor will, for example, open up at least one and sometimes two positions for entry-level faculty personnel.

Examples of each approach follow:

Shifting into New Academic Activities

Arrowhead Community College, Itasca Campus (Grand Rapids, Minnesota) opened up new opportunities for young faculty members by establishing (a) a two-year associate degree program in computer science taught by a young instructor recruited from industry; (b) a professional development training program in customer relations, communications, computers, and tax planning for area businesspeople, given in the evenings or on weekends; (c) a career development program for women; and (d) a program to train students to work in mental health facilities, mental retardation programs, early childhood education, and nursing homes, coordinated by a young instructor who arranges workshops and seminars for students.

Results: The steadily increasing enrollment in all of the programs has opened up new opportunities for young faculty members. Other campuses in the Arrowhead Community College system are adopting similar programs.

Brooklyn College (Brooklyn, New York), during the summer of 1981, retrained personnel from overstaffed

departments to teach introductory courses in computer science.

Results: The course was so successful that it was repeated during the summer 1982. The City University of New York system has started a faculty development program based, in part, on the Brooklyn College model.

The University of Kansas (Lawrence, Kansas) helped to open up a tenured position for a younger faculty member and to expand faculty career options by establishing in 1980 a cross-departmental exchange program. Faculty members seeking experience in fields other than their own were given funds for study and were released from departmental duties. They could teach or take courses in other departments. During the first two years, a foundation grant helped support the program. Now the program is supported totally by the university.

Minneapolis Community College (Minneapolis, Minnesota), in 1980, founded a College for Working Adults to attract a new student body, especially women and minorities. Courses are given at night and, with the additional enrollment, faculty are able to teach a new curriculum through telecourses, evening courses, and weekend seminars. With increased enrollment, the college has been able to employ new young faculty members.

Results: The program began in 1980 with 160 students. Two years later the enrollment had increased to 405 students. Twelve new young faculty members were hired, and new opportunities were provided to three young faculty already on the payroll.

Northeastern University (Boston, Massachusetts) started an Irish Studies Program in 1980 in response to the community's interest in this new area of study as shown by a campus-wide survey. The program provides junior faculty with opportunities to develop new courses in Irish studies and conduct innovative research, with the object of eventually achieving tenure. New experimental courses, travel grants for both faculty and students, and research support are funded by alumni and community contributions.

Pennsylvania State University (University Park, Pennsylvania) launched a program in 1978 in which young liberal arts faculty members teach, conduct research, and take part in activities of departments other than their own. The university encourages these activities by reimbursing the departments for 50 percent of faculty time shared. Departments with growing enrollments may "borrow" faculty members from other departments; those departments "lending" faculty are permitted to give up faculty time each year without losing funds.

Mid-Career Changes

Gordon College (Wenham, Massachusetts) enables faculty members to test the desirability and

possibility of moving out of academia in mid-career by taking short-term assignments in business and industry.

Results: Several older faculty members who explored new career interests accepted positions outside of the college and opened new job opportunities for younger faculty members at the college.

Other colleges with programs allowing faculty members to explore non-academic activities include **Regis College** (Denver, Colorado) and **St. Olaf College** (Northfield, Minnesota).

Early Retirement

As already mentioned, early retirement plans are designed to open up more employment opportunities for young people. Among the plans of more than usual interest are the following:

Brown University (Providence, Rhode Island), with funds provided in part by the Mellon Foundation and in part from university resources, provides cash assistance and incentives for older faculty members who wish to retire early or to phase-in their retirement over a period of time.

Results: In the academic year 1982-83, five or six senior faculty members, who previously felt they could not afford to retire, are expected to accept early or phased retirement. Another six persons are considering retiring during the academic year 1983-84. The Brown University program is being

considered as a possible model by a group of selective private universities with which Brown works closely.

Five Colleges, Incorporated (Amherst, Massachusetts), a consortium consisting of Amherst, Smith, Mt. Holyoke, and Hamphire Colleges and the University of Massachusetts, is developing an early retirees' fellows program. An older faculty member who retires from any of the institutions will be appointed as a fellow of the five colleges and will be able to continue academic ties and privileges. When possible, fellows will be appointed to act as replacement faculty to teach single courses at one of the associated institutions.

Maricopa Community College System (Phoenix, Arizona) established an early retirement program which offers early retirees a package of benefits including (a) part-time employment for at least ten work days a year through age 70, (b) major medical and other fringe benefits until age 70, (c) retirement counseling and pre-retirement classes, (d) enrollment in college classes without cost, (e) access to campus events, and (f) an employee newsletter focused on retiree concerns and activities.

University of Puget Sound (Tacoma, Washington) established an early retirement program in 1977 which pays a bonus to tenured faculty with long periods of service who retire between the ages of 60 and 65. The bonus amounts to 30 percent of one year's

salary if retirement occurs at age 64; 60 percent at age 63; and up to 150 percent at age 60. In July 1982, when the mandatory retirement age under federal law became 70, faculty between the ages of 65 and 70 were given an opportunity to retire on social security and teach part-time. They could receive annual compensation not to exceed the maximum allowable outside income for persons receiving full retirement benefits from the social security system.

Stanford University (Stanford, California) set up an innovative program in 1974 offering an early retirement option for faculty reaching age 62 with at least 15 years' employment at the university. The retirement payment is based on the median salary for each faculty rank at the institution. Although the program is open to all eligible faculty, it is more attractive to those persons whose salaries are below the median for their rank.

The Results: Since 1977, 35 faculty members have retired early, opening at least that many new positions for new young people.

Yale University (New Haven, Connecticut) worked out a part-time teaching arrangement for older arts and sciences faculty wishing to retire from full-time teaching duties, which allows them to teach one-third of the usual course load. In addition, the university permits some of its arts and science departments to anticipate future retirements of senior persons by

appointing junior faculty to the positions involved some two or three years before the retirement actually occurs.

The Results: In the last several years, 12 faculty members participated in the partial retirement program, opening up an equivalent number of tenured positions for younger persons.

Chapter 2

Ideas on Developing Innovative Employment Policies

The Situation

The large number of middle-aged faculty on college and university campuses at a time when enrollments are expected to decline, coupled with the effect of the new federal laws changing mandatory retirement from age 65 to age 70, limits faculty turnover to minimal levels. Higher education institutions are limiting tenure-track appointments for new faculty members and are placing caps on the percentage of faculty on tenure. In combination, these factors affecting the employment of young faculty are causing some of the most capable young college graduates to leave academia.

The Challenge

To foster employment policies flexible enough to attract the most capable young people to careers in college teaching.

The Ideas

Cornell University (Ithaca, New York), in 1980, with its own funds and a grant from the Mellon Foundation, started a capital fund to support new appointments or promotions of new young scholars in the humanities. Departments within the College of Arts and Sciences may draw "loans" from the fund to help pay for the cost of a young faculty member's salary. These loans are tied to older faculty members' future retirements. The departments expect that when senior faculty members retire, there will be a large difference between their salaries and those of their junior replacements. The money saved in salary differential will be paid back to the fund so that the

college can continue the program. This temporary set-up is designed to give flexibility in recruiting promising young scholars and retaining them until faculty retirements make it possible to absorb the positions permanently.

Hampshire College (Amherst, Massachusetts) utilizes a system of employment by contract for all faculty rather than by tenure. New young faculty members are offered initial contracts of three years; their second contracts run for four years; and succeeding contracts run for ten years until retirement.

Results: Administrators say that the system of faculty employment by contract has helped the college draw promising young faculty members attracted to a contract system less restricting than the tenure system.

Madonna College (Livonia, Michigan) offers multi-year contracts to new faculty members on a progressive time schedule as follows: (1) a one-year contract renewable for an added year; (2) a two-year contract upon recommendation from the department chairperson and the academic dean; (3) a three-year contract renewable in continuous three-year segments if prior contracts have been completed successfully.

Results: During the 1982-83 academic year, 51 percent of the faculty will become eligible for multi-year

contracts.

Maricopa Community Colleges (Phoenix, Arizona) plans to employ, over the next five years, between 100 and 150 young faculty members. The plan calls for the central administrative offices to match salary positions on each campus on a one-to-one basis. For every additional new young faculty member employed by a college in the district, the program will pay for another faculty position. The governing board of the system allocated $1.5 million over five years for the entire project. This project is carried out in tandem with an early retirement program designed to open up tenure-track positions for younger faculty members.

Results: Since July 1, 1981, when the project was enacted, the colleges have filled ten new teaching positions with persons meeting the governing board's criteria: young people who will enhance the racial and ethnic balance of the faculty.

Webster College (St. Louis, Missouri) established a program in which a young untenured faculty member in the third year of employment can waive the opportunity for tenure and take a leave of absence in the fourth year. The college provides one-half salary for a year's leave or full salary for one semester. Young faculty members can pursue advanced degrees, continue research, or develop professional interests outside the college. Although program participants waive their right to tenure, the college, in certain cases, has the option to grant them tenure.

Results: Of the current 74 full-time faculty members, 32 have been granted faculty development leaves. Two-thirds of the 32 members—22—are now tenured. College administrators believe that the program has improved faculty morale and has allowed the institution to retain promising young faculty members.

Other colleges with innovative employment policies include:

Christian Brothers College (Memphis, Tennessee), which offers young faculty opportunities to supplement salaries through overtime teaching at the college's evening division or at other institutions in the city.

Sarah Lawrence College (Bronxville, New York), which permits both full-time and part-time faculty members in the performing and creative arts to receive rights, responsibilities, and benefits equal to those enjoyed by other faculty in the college.

Southwestern Baptist Theological Seminary (Fort Worth, Texas), which patterned its salary scale after industry, providing substantial promotions for young faculty members during the first few years of their careers.

Yale University (New Haven, Connecticut), which has extended to a maximum of ten years the length of

time before young faculty are reviewed for tenure. The extension provides additional time needed by junior faculty to prepare professional credentials for tenure review.

Ideas on Increasing
Research Opportunities

Chapter 3

The Situation

In the ever tightening competition for research money, many promising young faculty members are losing out on the opportunities they need to advance in their fields.

The Challenge

To provide research opportunities for young faculty members without track records of accomplishment.

The Ideas

American Electronics Association (Palo Alto, California), through its Electronics Education Foundation, plans to provide in the near future 300 faculty assistance grants of $10,000 each, which the recipient institutions can use to provide salary supplements to enable young faculty members to engage in research activities.

University of California, Berkeley (Berkeley, California) provides young faculty members with operating budgets and staff for field research in the natural and social sciences. Members of the general public wishing to participate in a research project as field assistants pay a fee to the program and work with a researcher, usually a young faculty member.

Results: The university research expeditions program has supported more than 30 research projects conducted by new faculty under age 35, and has enabled some of them to obtain larger, long-term grants based on the data collected during field research.

The university's program expanding research opportunities for young engineers is described in Chapter 4 of this report.

Carnegie-Mellon University (Pittsburgh, Pennsylvania), as part of its engineering program, established the Robotics Institute, a cooperative university/government/industry research and development organization focusing on the industrial possibilities of robots. With funds from government agencies and industry, the institute purchased modern, sophisticated equipment, and made it available to younger faculty members. The institute also arranged for researchers from government agencies and industry to collaborate with young faculty members on research projects.

Colorado State University (Fort Collins, Colorado), working through the Colorado State University Research Foundation, launched a program to acquire the most modern research equipment available. The foundation used various leasing and borrowing arrangements to obtain equipment, and then arranged for the university to charge portions of the acquisition costs to the federal, state, or private agencies supporting research projects. The program has enabled the university to provide younger faculty members with research equipment at the beginning of a project or proposal.

Five Colleges, Incorporated (Amherst, Massachusetts) has established a research associates program for young faculty members whose contracts have been terminated or who are having difficulty finding employment, and may therefore abandon academic careers. Two-year appointments permit young faculty to continue research and to have (a) an academic affiliation, (b) access to all five library systems, (c) office space, (d) medical insurance, (e) access to seminars and lectures, (f) the collegiality of faculty in their fields, and (g) temporary teaching assignments at their institutions.

Results: Each of the five institutions will appoint three associates per year for two-year periods, with a total of 30 persons involved each year after the first round of appointments has been completed.

Mayo Medical School (Rochester, Minnesota) provides practical research experience in the students' third or fourth year of training. Students select a project from a catalog of clinical research opportunities and work on it for five to twelve months. They are given individual laboratories and funds to cover research costs and work closely with faculty members. The students are required to write up their findings and are encouraged to publish the results.

Results: Since the program began, approximately 40 young medical students have participated each year. From 1977 to 1980, about 80 students published original papers, 60 of which were presented at

national conferences. The 1982 class conducted its own symposium to discuss papers.

University of Minnesota (Minneapolis, Minnesota) obtained five-year funding from the Northwest Area Foundation to enable the university's physical sciences departments to appoint and set up research programs for young faculty members. The various departments bid for the right to make appointments, based on need. Appointees are given light teaching loads, research funds, and stipends for their first summer in residence.

University of New Haven (West Haven, Connecticut), with money from its operating budget, has a program to increase research opportunities for young faculty members consisting of three separate but related parts, all coordinated and administered by the graduate dean: (a) a competitive "research fund" to provide direct financial support of faculty research activities; (b) a research/teaching assistantship program for graduate students to help faculty members do research; and (c) a competitive summer stipend program offering salary support to encourage research-oriented projects by summer faculty.

Results: The program has provided research support to faculty in the schools of arts and sciences, business, and engineering.

Rensselaer Polytechnic Institute (Troy, New York), established two research institutes—a Center for

Interactive Computer Graphics and a Center for Manufacturing Productivity and Technology Transfer —and offered industrial companies affiliate memberships in these organizations. With membership fees and corporate contributions, the institute offers new young faculty members three-year "packages" of over $82,000 each for (a) academic-year released time for research, (b) graduate student assistants, (c) equipment, (d) summer salary, (e) hiring and moving expenses, (f) travel support, and (g) secretarial support. Additional funding for research equipment brings the total up to almost $100,000 per new faculty member. The institute also supports research by new faculty members in applied humanities and social sciences at its Center for the Study of Human Dimensions of Science and Technology.

Results: Since the program began, the School of Engineering has hired 54 faculty members, 15 of whom were under age 35. These new faculty have helped bring new financial support from industry to the institute. Officials believe that the high level of research offers great appeal to young engineers and scientists. The School of Humanities and Social Sciences has committed 30 of its faculty members to the activities of the Human Dimensions Center, and has employed a number of new young faculty members with applied research interests.

University of West Florida (Pensacola, Florida), in 1972, started to provide young faculty with

comprehensive teaching and research support, and many awards and prizes to stimulate research and creative endeavors. The program has been supported by state, private, and federal funds, as well as by a university policy to return a large share of the overhead costs of externally-funded programs to departments and individuals.

Yale University (New Haven, Connecticut) offers young faculty members a variety of teaching prizes, research grants, and released time support to conduct research and present papers at national meetings, all of which are intended to improve credentials for tenure review.

Other universities and colleges reporting research support for young faculty members include: **Brown University** (Providence, Rhode Island) with Wriston Fellowships; **University of Colorado** (Boulder, Colorado) with a competitive grant program to support research; **Macalester College** (St. Paul, Minnesota) with grants for research and for participation in professional meetings; **New York University** (New York, New York) with fellowships for major research; **Oberlin College** (Oberlin, Ohio) with research fellowships to junior faculty members in the humanities and social sciences; as well as **Sacred Heart University** (Bridgeport, Connecticut), **University of Vermont** (Burlington, Vermont), **Wabash College** (Crawfordsville, Indiana), and **University of Wisconsin-Madison** (Madison, Wisconsin).

Chapter 4

Ideas on Filling Faculty Positions in Engineering*

The Situation

At a time when enrollments in the liberal arts and sciences are declining across the country, the number of students in engineering is growing substantially. The upward trend in engineering school enrollments requires more faculty, while, at the same time, industry is offering extraordinarily attractive salaries and professional development opportunities. The result: faculty shortages everywhere.

The Challenge

To provide compensation packages, research opportunities, and working environments attractive enough to draw highly qualified young engineers into academia.

The Ideas

American Electronics Association (Palo Alto, California), a national, nonprofit organization serving private industry and academic engineering departments, began a program in 1980 to impress upon board members of colleges and universities and on members of state legislatures the severity of the engineering faculty shortage and the need to improve salaries of engineering faculty members.

Results: The association's first efforts, addressed to the University of California system, will result in salaries being raised from 23 to 33 percent for engineering faculty members; in addition, engineering departments of institutions in the system have been permitted to establish salary scales plans higher than those at other departments in the university.

...ntitu...cal ideas are in ...ples of this report.

Arizona State University (Tempe, Arizona). In 1980, the College of Engineering and Applied Sciences with the assistance of the university's advisory council for engineering developed a plan for engineering excellence designed to increase the quality of engineering education and research. One first step of the plan was to provide special salary increases for younger engineering faculty members in order to make their salaries more competitive with industry.

Results: The program stopped the drain of young engineering faculty. The university has employed several young professors from industry; committed 37 faculty positions to the program; increased research funding; and conducted a large-scale fund-raising activity for developing an engineering education extension arrangement in which faculty members teach advanced courses to professional engineers at their job sites.

Bradley University (Peoria, Illinois) employed a professional advertising agency to develop an advertisement to appeal to qualified potential faculty employed in industry or to young engineers who had recently obtained advanced degrees.

Results: As a result of its advertisement, the university received 136 applications. Thirty-three percent of the applicants had doctoral degrees and 55 percent were employed in government or industry.

University of California, Berkeley (Berkeley, California). The College of Engineering raised almost $250,000 to develop research opportunities for young faculty members, and arranged with industrial donors to offer them consultancies and research contracts. Young faculty members are provided with summer salaries for up to two years to develop research projects. Financial support is also given to young engineering faculty members to purchase research equipment.

Results: In two years, 20 newly recruited faculty members have participated in the program. The college was able to hire 17 new faculty members in 1980, compared with six in 1979.

University of California, Davis (Davis, California). The College of Engineering's program to recruit and retain young faculty members includes: higher pay scales for engineering faculty than most of the other departments; loans at a lower than market interest rate for the purchase of homes; summer research support for two years and light teaching or administrative loads; tenured positions for younger faculty opened up by phased, early retirement of older faculty members; achievement of tenure in four or five years instead of the usual seven or eight years; priority in obtaining research equipment; and faculty development conferences.

Cornell University (Ithaca, New York) began a program in its College of Engineering to recruit and retain young faculty members by providing: light course loads for new faculty members; assistance in finding employment for young faculty members' spouses; summer salaries and research funds for young faculty; and state-of-the-art research centers in which industrial researchers collaborate with faculty members.

Colorado School of Mines (Golden, Colorado) and **Georgia Institute of Technology** (Atlanta, Georgia) both undertook major campaigns to impress upon private industry the need for maintaining strong engineering faculties and to raise funds for this purpose.

Duke University (Durham, North Carolina). The School of Engineering has used the availability of the facilities at the Research Triangle Park (a state-built research institute which combines the engineering and computer science faculties of Duke, the University of North Carolina, and North Carolina State with the research staffs of several major corporations) as a special attraction for retaining young faculty members. The facility has helped raise the level of research at Duke and has drawn young scientists from the corporations to the university as adjunct professors.

Results: In the last 15 years, Duke has not lost an engineering faculty member to industry.

University of Illinois, Urbana Campus (Urbana, Illinois). With funds from industrial donors, the College of Engineering developed a program to encourage larger numbers of the most promising engineering undergraduates to pursue advanced degrees. The college developed, published, and distributed widely a brochure intended to make students more aware of graduate school opportunities.

University of Michigan (Ann Arbor, Michigan). The College of Engineering designed a number of activities to help recruit and retain young faculty members, including: securing a loan from college discretionary funds and receiving matching support from the university administration (to be paid back in the academic year 1982-83) to raise salaries of assistant and associate professors to levels among the highest in the nation; offering several years of reduced instructional load, summer support, equipment, support staff, and computer time to allow junior faculty members to establish research projects; encouraging senior faculty to assist new young faculty in securing external grants; and providing junior faculty with opportunities to help determine college policy by including them on departmental committees.

Results: In the past year, the College of Engineering retained all of its tenured younger faculty members; nine of the 11 candidates offered new faculty positions accepted.

Rose-Hulman Institute of Technology (Terre Haute, Indiana) gives engineering graduate schools the opportunity of recruiting prospective students before they are approached by recruiters from private industries. Representatives from public and private universities are invited to come to campus and to conduct a graduate studies seminar. After the seminar, the university recruiters discuss their programs further with individual students.

Results: Ten percent of the graduates from Rose-Hulman last year are now attending graduate school as compared to five percent from 1975 to 1981.

Other colleges and universities reporting programs designed to attract young engineers to academic positions include: **Clemson University** (Clemson, South Carolina), **Cooper Union for the Advancement of Science and Art** (New York, New York), **Howard University** (Washington, D.C.), **Montana College of Mineral Science and Technology** (Butte, Montana), **University of New Orleans** (New Orleans, Louisiana), **Oregon Graduate Center** (Beaverton, Oregon), **Princeton University** (Princeton, New Jersey), **Purdue University** (West Lafayette, Indiana), and **University of Utah** (Salt Lake City, Utah).

The shortage of engineering faculty members has stirred national concern among universities, private industry, national associations, and federal and state governments. Various activities have been organized

to bring together people concerned about the situation and also in positions to make changes, to provide forums for discussion of the problem, and to bring about solutions. Among the activities are the following:

A National Engineering Action Conference (April 1982) developed an agenda of proposed action steps including: corporate support for and professional ties between industry and academic engineering departments, better salaries and working conditions for engineering faculty members, federal and state support for engineering graduate students, and allowing universities to develop semi-autonomous engineering schools.

The Engineering College Faculty Shortage Project of the American Association of Engineering Societies/American Society for Engineering Education Engineering College (established in 1981 with funding by ten companies) is collecting and disseminating information and data on engineering faculty shortages in order to increase public awareness of the shortage situation.

The study of the U.S. House of Representatives Committee on Science and Technology is looking into proposed legislation to be called the "National Engineering and Science Manpower Act." The legislation is designed to create a Coordinating Council on Engineering and Science Manpower and a

Special Engineering and Science Matching Fund. Both are aimed at stimulating industry support of engineering education by providing matching funds for corporate grants to engineering programs.

Recent legislation in Arizona, California, New Mexico, North Carolina, and Wyoming has funded the expansion of engineering facilities and equipment in the public universities in those states.

The Business-Higher Education Forum (1982) brought corporate representatives and educators together to map strategies for attacking the engineering faculty shortage problem, such as encouraging greater industry support for academic departments of engineering.

Grants to colleges of engineering by several large corporations working through their foundations. The funds are to encourage undergraduate students to pursue advanced degrees and graduate students to complete doctoral study; for endowed chairs; for discretionary funds to department heads for stipends and salary supplements; and for new equipment for junior faculty members.

The establishment of a fund by the Council for Chemical Research (representing 38 chemical companies and 125 Ph.D.-granting universities) for its member universities to receive grants to be used to encourage students to pursue advanced degrees.

Ideas on Providing
Housing Incentives

Chapter 5

The Situation

During the past two or three years, college and university deans and department heads have found that the unavailability of college housing for new faculty and of mortgage financing for private housing at reasonable interest rates have been barriers to their ability to recruit some of the more promising young faculty members for their institutions.

The Challenge

To work out creative ways to provide affordable housing or housing financing for new faculty members.

The Ideas

Davidson College (Davidson, North Carolina) established a two-part housing assistance program for young faculty members. For young renters, the college provides rental housing. For young home buyers, the college subsidizes a portion of mortgage loan interest. The subsidy plan is designed specifically for younger persons by providing proportionately more assistance at the beginning of a mortgage-loan period than at the end.

Results: Since the program started in 1970, 27 faculty members have acquired homes and are receiving annual subsidies. Administrators feel that satisfaction with housing and the opportunity to live in the college community are key elements in attracting young potential faculty members to the college and in boosting morale.

Pepperdine University (Malibu, California) constructed 50 units of condominiums and duplex homes for faculty and staff, and arranged for mortgages with interest rates much lower than local market costs. A number of the condominiums were reserved especially for new young faculty members. The university used its own funds to subsidize the $8 million program.

Results: Pepperdine recently received 12 acceptances of employment offers to young faculty members who might have sought positions elsewhere had no housing assistance been available.

University of Southern California (Los Angeles, California), in 1982, began a shared appreciation loan program, designed to make it easier for eligible young faculty and staff to obtain financing and to meet monthly payments on a single-family residence. The university provides the participant with up to 90 percent of the property's value in primary and secondary financing. To help assume the costs of the secondary financing, the university shares in the appreciation of the property. The participant has full responsibility for the maintenance of the property, and receives full benefit of the interest and tax deductions.

Stanford University (Stanford, California), with $21 million from its endowment investments, offers new young faculty members low down payments and reduced rates on mortgages for homes on the

Stanford campus or within a 15-mile radius of the university. The mortgages mature two years after borrowers leave the faculty or whenever the house is unoccupied. At maturity, the university receives a share of the value of the house's appreciation since issuance of the mortgage. This share is then reinvested in new mortgages for young faculty members.

Results: By March 1982, 104 persons, many of whom were new faculty members, had participated in the housing program. Deans at the university believe that the program has significantly increased ability to attract and retain young faculty members.

As indicated elsewhere in this handbook, a number of other colleges and universities are subsidizing housing costs for young faculty who have difficulty in acquiring housing near their institution. For example:

University of California, Davis (Davis, California) provides young faculty persons with loans at less than the market rate of interest to enable them to purchase homes.

Christian Brothers College (Memphis, Tennessee) covers moving expenses and provides temporary on-campus housing for new young faculty members

Georgia Institute of Technology (Atlanta, Georgia) provides housing location and moving assistance, as

well as mortgage subsidies.

Princeton University (Princeton, New Jersey) provides home loan assistance for young faculty members seeking housing near the campus.

Chapter 6

The Situation

As has been mentioned in previous chapters, the tight budget outlook at most higher education institutions, coupled with the small number of job openings, has made it especially difficult during the past few years for young people to enter academia.

To ease the passage of young people into their first faculty position, most colleges and universities have relied upon traditional methods, such as creating good working conditions and pleasant associations in an academic atmosphere; providing fellowships, sabbaticals, teaching and research assistantships; and offering salary supplements earned by teaching in the summer or during "off-hours." Also, in the traditional manner, senior faculty members often act as mentors and counselors for younger professors; college officials arrange training sessions to improve teaching capabilities of young faculty appointed right out of graduate school; department chairpersons reduce teaching loads and pay out-of-pocket costs incurred to enable young scholars to complete doctoral studies, or to research and publish—opportunities young faculty members need to strengthen credentials for tenure review. Examples of these practices are listed elsewhere in this report.

Some colleges and universities have developed variations of the tried and true approaches to the problem of attracting and retaining young faculty

members. A number of interesting ideas, not previously described in this report, follow.

The Ideas

American Electronics Association (Palo Alto, California), through its Electronics Education Foundation, began in 1980 to give 200 graduate student fellowships of $15,000 each for two years, renewable for another two years upon competent performance, and open to students interested in teaching on completion of a doctoral degree.

University of Chicago (Chicago, Illinois) created the William Rainey Harper Instructorships in 1975. Young postdoctoral students are appointed to two-year faculty positions at regular annual salaries and are assigned to teach two intellectually challenging humanities or social science courses (six hours of classwork) each week. With the relatively light course load and freedom from administrative duties, these instructors have time to carry on research.

Results: Fourteen young scholars took part in the program in the academic year 1981-82. Administrators report that almost every participant has fulfilled the terms of the appointment and has gone on to a regular teaching assignment. In some cases, even with offers for tenure-track positions elsewhere, candidates have accepted Harper Instructorships for the experience they offered. The challenging course work, research opportunities, and institutional and faculty support provide much-needed career transitions for gifted young scholars.

Fashion Institute of Technology (New York, New York) provides teaching backgrounds and credentials to the technicians whom the institute draws from industry to serve as faculty members. The program is a cooperative effort with the Empire State College of the State University of New York system at the bachelor's degree level and with Teachers College of Columbia University at the graduate level.

Results: The program has helped the institute acquire and retain the young people from industry needed to serve as faculty members.

University of Illinois, Urbana Campus (Urbana, Illinois). The university's Department of Microbiology offers young faculty members: transportation (with their spouses) prior to employment to the university where they can meet faculty members in social settings; job interviews for career-oriented spouses; unrestricted funds for purchasing equipment and for hiring administrative, teaching, and research assistants; released time from teaching assignments for the first semester; and support for attending national scientific meetings.

University of Michigan (Ann Arbor, Michigan) conducts workshops at its Center for Research on Learning and Teaching to help young faculty members develop teaching skills including: becoming effective speakers, preparing interesting and informative lectures, leading discussions with students, and constructing adequate tests.

University of Northern Iowa (Cedar Falls, Iowa) offers young people with master's degrees in business administration a number of high-level apprenticeships designed to interest them in academic careers. Apprentices teach, do simple research, serve on committees, attend seminars organized by the dean, receive support to visit doctorate-granting institutions, and are offered special one-year leaves at one-half salary to help them complete their doctorates.

Ohio State University (Columbus, Ohio) established in 1980 a university senate committee on women and minorities and a task force on academic excellence for women. The committee seeks to ensure representation of young women and minority faculty in campus activities, particularly in university governance committees. The task force initiated a number of activities, including the linking of junior women faculty with key university organizations; stimulating collegial networks among junior and senior women faculty members; and conducting workshops for young female faculty members on topics such as research grant proposal writing, tenure and promotion, combining careers and academic work with family responsibilities, and concerns of single women in academia.

University of Oregon (Eugene, Oregon). The university's Department of Computer and Information Science began in 1969 to raise the quality of teaching

and research and to recruit and retain young faculty members by offering new faculty first choice of which courses they want to teach, of what days of the week and hours of the day they prefer to teach, and of the arrangement of their five courses over three terms; ensuring that new faculty have no departmental or advising duties; providing funds for one conference trip a year and for summer research; and encouraging joint research between junior and senior faculty, and helping new faculty members write grant proposals. The department also began to hire young part-time instructors from local industry or government to teach lower-level courses in computer programming.

Results: Since 1969, the Department of Computer and Information Science has had no difficulty filling vacant faculty positions. Fifteen computer scientists have been employed as part-time instructors and six professionals have applied for positions next year. The program brings in new expertise to the department, permits more students to be taught, and allows young faculty members to teach challenging, upper-level courses, thus helping to attract and retain them.

Pennsylvania State University (University Park, Pennsylvania). The College of Earth and Mineral Sciences at Penn State gives two awards for outstanding teaching; pays for new faculty members' moving expenses; covers the cost of publishing young faculty members' research findings; finances the purchase of new equipment; and supports

administrative and research assistance. The College of Business Administration with alumni support pays supplements of one-ninth of annual salary to young faculty members for two summers of research; encourages mentorships between senior and junior faculty members and association with private industry; conducts workshops on attaining promotion and tenure; provides funds for professional travel; gives assistance in preparing and publishing manuscripts; and provides executive development training to young faculty members.

Results: University officials believe that they have succeeded in reaching their employment goals in a highly competitive recruiting environment by obtaining and retaining top quality young faculty members in petroleum, mining, and materials engineering and in business administration.

Trinity College (Burlington, Vermont), in 1979, reorganized its Humanities Department to consolidate various disciplines into a single interdisciplinary program: U.S./Canadian Comparative Cultures. Courses in this program were integrated into Trinity's Weekend College. The new program permits greater flexibility in developing a system of extended contracts for young faculty members.

Results: The Humanities Department has been able to retain all of its younger faculty and also has employed additional young faculty members.

University of Vermont (Burlington, Vermont), in 1980, brought together faculty members from disciplines such as genetics, medicine, and managment to act as independent corporate entities for outside consulting. Young faculty members from these departments form "Associates" groups, in which they perform research and serve as paid consultants to outside agencies and industries.

The Award Winners

Part B

Citations

Brown University
Providence, Rhode Island

Brown has improved its ability to attract and retain young faculty members by offering young scholars a variety of teaching fellowships, research grants, first book prize awards, and special academic appointments. By giving senior faculty members incentives to retire early, Brown has opened up positions for junior persons. Together, the various approaches have made a significant contribution to attracting and retaining young faculty members.

Certificate of achievement accepted for Brown University by Dr. Maurice Glicksman, Provost and Dean of the Faculty.

Cornell University
Ithaca, New York

In 1975, Cornell began offering two-year fellowships for young humanists. In 1980, Cornell's College of Arts and Sciences set up a capital fund to provide for new appointments or promotions of young scholars in the humanities, an innovative arrangement allowing the college to employ promising young faculty in anticipation of future personnel requirements. In 1980, also, Cornell's College of Engineering began to provide a range of effective financial incentives and research opportunities for young faculty members with funding from private industry and foundations.

Certificate of achievement accepted for Cornell University by Dr. Thomas E. Everhart, Dean, College of Engineering.

Five Colleges, Incorporated
Amherst, Massachusetts

The Five Colleges consortium's research associates program offers two-year appointments to young faculty whose contracts have been terminated by a member of the consortium or who are having difficulty finding employment and may, therefore, abandon academic careers. The consortium has also helped to open positions for young faculty by developing a fellows program for early retirees enabling retired faculty members to be appointed as single course replacements in one of the colleges, thus maintaining their academic ties.

Certificate of achievement accepted for Five Colleges, Incorporated by Dr. E. Jefferson Murphy, Five Colleges Coordinator.

Gordon College
Wenham, Massachusetts

In 1976, Gordon established a broad program for individualized faculty development which included placing faculty in short-term assignments in business and industry to test the feasibility and desirability of mid-career moves out of academia. Faculty development activities have encouraged innovation and experimentation. Mid-career testing has enabled several older faculty to explore new interests and to find employment elsewhere, thereby opening up positions for junior faculty personnel.

Certificate of achievement accepted for Gordon College by Dr. Richard F. Gross, President.

University of Illinois, Urbana Campus
Urbana, Illinois

To meet industry's competition for promising young personnel, the university's Department of Microbiology and College of Engineering have taken aggressive steps to attract and retain young faculty members. Junior faculty have been offered a variety of incentives and research opportunities, and undergraduate students have been encouraged to pursue advanced degrees. The university has also undertaken to support young faculty personnel who wish to study in a discipline outside their own.

Certificate of achievement accepted for University of Illinois, Urbana Campus by Dr. William M. Plater, Associate Coordinator, Advisory Committee on Interdisciplinary Programs.

University of Michigan
Ann Arbor, Michigan

The university's Center for Research on Learning and Teaching conducts workshops to assist young faculty members to develop skills that have helped improve significantly their teaching effectiveness and job satisfaction. The university's College of Engineering has provided its junior faculty with a comprehensive group of research and career development opportunities.

Certificate of achievement accepted for University of Michigan by Dr. W. J. McKeachie, Director, Center for Research on Learning and Teaching.

Pennsylvania State University
University Park,
Pennsylvania

Penn State has offered young liberal arts faculty members an innovative interdisciplinary teaching and research program, thereby enabling departments to retain young faculty members who might otherwise leave for other positions. The university's College of Earth and Mineral Sciences and its College of Business Administration have established a number of professional development programs and incentives for young faculty personnel.

Certificate of achievement accepted for Pennsylvania State University by Dr. John W. Oswald, President.

Rensselaer Polytechnic Institute
Troy, New York

The institute launched a major program to enable industry to participate in the activities of two specialized research centers on campus and raised the level of high technology research as well as research funding. Young engineering faculty members have received substantial financial support for equipment, travel, and research. The institute also established a Center for the Study of the Human Dimensions of Science and Technology and offered research support to new young faculty in applied humanities and social sciences during their first four years on campus.

Certificate of achievement accepted for Rensselaer Polytechnic Institute by Dr. David L. Ellison, Associate Professor of Sociology.

Stanford University
Stanford, California

Stanford has established a number of comprehensive programs to attract and retain young faculty members. The university's Center for Teaching and Learning has encouraged young graduate students with superior teaching ability to seek academic careers. Fellowships for young untenured faculty members in the Humanities Division have enabled them to conduct research at the Stanford Humanities Center. A second mortgage coinvestment program provides major housing assistance to new faculty. An innovative early retirement option for senior faculty members has opened up positions for younger persons.

Certificate of achievement accepted for Stanford University by Dr. Robert Lindquist, Associate Director of Development.

Yale University
New Haven, Connecticut

Yale has used several effective programs to attract and retain young faculty members, including departmental awards to graduate student teaching assistants that recognize outstanding teaching, a variety of research grants, released-time support, and teaching prizes to enable junior faculty members to conduct research. The university has extended the length of time available prior to tenure review to enable young faculty personnel to strengthen their professional credentials; has provided opportunities for re-specialization for faculty persons who do not

anticipate receiving tenure; has arranged for partial retirement of older faculty to open up tenure opportunities to younger persons, several of whom are appointed early; and has made early appointments in anticipation of the retirement of older persons.

Certificate of achievement accepted for Yale University by Dr. Charles Long, Associate Dean, Yale College.

Part C

Summaries of the 115 Entries

University of Alabama in Huntsville
Industrial and Systems
Engineering Department
Huntsville, Alabama

Teaching and Consulting Internships for Engineering Graduate Students

The Situation: Most students graduating with a bachelor's or master's degree from the university's Industrial and Systems Engineering Department accept offers from the industrial sector, while only a few graduates seek academic careers. The incentives for young graduates to pursue academic careers have not kept pace with starting salaries offered by industry.

The Idea: In March 1982, the Industrial and Systems Engineering Department proposed the establishment of teaching and consulting internships at salaries competitive with those in industry for young graduate students seeking advanced degrees. The plan calls for joint sponsorship of the internships by the university, local industry, and the Society of Manufacturing Engineers Education Foundation. The intern would be committed to three years of supervised, diversified teaching in the department and would be able to do consulting one day per week and to work as a paid intern to private industry during the summers.

The Results: The Engineering Department received a commitment from a local industry to support a teaching and consulting intern, and has submitted a proposal for funding to the Society of Manufacturing Engineers Education Foundation. Department officials believe that the offer of an opportunity to young engineering graduate students to perform as bona fide faculty members and to be paid accordingly will encourage them to pursue academic careers.

Contact: Dr. J. T. Black, Chairman, Industrial and Systems Engineering Department, University of Alabama in Huntsville, Huntsville, AL 35899
Telephone: (205)895-6568

Alverno College
Milwaukee, Wisconsin

Integrated Arts and Humanities Curriculum

The Situation: With fewer and fewer students majoring in programs offered by the several arts and humanities departments at Alverno College, faculty members became increasingly dissatisfied with the quality of their teaching experience. Opportunities to teach advanced students or to develop exciting new materials and ideas had fallen off drastically. Some of the best and brightest young faculty were leaving, having decided to seek jobs at universities with larger humanities programs or to go to the corporate sector.

The Idea: A group of concerned arts and humanities faculty members at Alverno decided to work together on improving the quality of their teaching experience and environment. The group (a) analyzed the similarities and differences of their situations, (b) developed some basic assumptions, and (c) combined the curricula of four departments into one broad humanities program which integrated and sequenced courses and perspectives in similar and differing disciplines. The new curriculum includes more advanced courses together with more sophisticated materials for upper-level study. Interdisciplinary teaching and development efforts have enabled faculty to broaden their abilities in areas outside their own disciplines.

The Results: The new curriculum has turned out better prepared students. Faculty turnover in the humanities departments has decreased. The college reports that the faculty are more enthusiastic, there is increased job satisfaction, and the faculty has been recharged by the effort and the supportive atmosphere of change and improvement.

Contact: Dr. James L. Roth, Assistant Professor of History, or Dr. Lucy Cromwell, Associate Professor of English, Alverno College, 3401 South 39 Street, Milwaukee, WI 53215
Telephone: (414) 647-3999

American Electronics Association
Electronics Education Foundation
Palo Alto, California

Lobbying Program for Higher Engineering Faculty Salaries, Faculty Assistant Grants and Graduate Student Fellowships

The Situation: The Electronics Education Foundation of the American Electronics Association (a national, nonprofit organization serving private industry and academic engineering departments) found that (a) almost 50 percent of the faculty positions in certain engineering specialties are unfilled, (b) faculty salaries in engineering departments have not kept pace with industry, (c) equipment and facilities used in engineering education are out-of-date, and (d) teaching loads and student/faculty ratios are high. Additionally, the association felt that college and university board members and state legislators did not know enough about the serious shortages of engineering faculty nor the reasons therefor.

The Idea: In 1980, the association launched a campaign to impress upon board members of colleges and universities and on members of state legislatures the seriousness of the engineering faculty shortage and the need to improve salaries of engineering faculty. The Electronics Education Foundation began to raise funds from industrialists to support engineering education at colleges and universities by (a) providing 300 faculty assistance grants of $10,000 each, which the recipient institutions can use to provide salary supplements for young faculty members, or to hire graduate assistants, or to provide professional travel expenses; and (b) providing 200 graduate student fellowships of $15,000 each for two years, renewable for another two years upon competent performance, and available to students from recognized research institutions interested in teaching upon completion of their Ph.D. degrees.

The Results: The campaign to change the salary structure for professors of engineering in the University of California system will raise salaries of engineering faculty members by 23 to 33 percent and permit engineering departments of institutions in the system to establish separate salary plans similar to those available to schools of law and medicine. The grants for faculty assistance and the fellowships for graduate students have just begun. Association and foundation officials believe that because of their efforts, salaries for junior engineering faculty will be more competitive with those of private industry, and that the pool of prospective, doctorally qualified, young engineering faculty members will be increased.

Contact: Dr. Pat Hill Hubbard, President, American Electronics Association Electronics Education Foundation, 2680 Hanover Street, Palo Alto, CA 94304 Telephone: (415) 857-9300 x239

Appalachian State University
Boone, North Carolina

Nine-Month Contracts for Librarians

The Situation: A decade ago professional librarians at Appalachian State University found that although they had faculty status, they had been hired at non-tenure or non-promotion levels because they did not hold doctoral degrees in library science. With 12-month employment contracts, they were unable to pursue advanced degrees which would make them eligible for tenure. Accordingly, young librarians at the university began to seek employment elsewhere; and promising prospective recruits were reluctant to join the staff.

The Idea: In 1972, university officials established a new employment contract arrangement under which librarians would hold nine-month academic year contracts comparable to those held by other faculty members. As the campus library is open during the summer, librarians could work two summers out of three with flexibility allowed for individual schedules. Persons working during the full summer would receive additional pay equivalent to approximately 25 percent of their basic nine-month salary. Library faculty members who took off the summer would be free to pursue advanced degrees, travel, or take advantage of career and personal development activities.

The Results: The program has enabled 14 library faculty members to earn doctoral degrees and to become eligible for tenure. University officials consider the program instrumental in retaining younger librarians who would otherwise have left, and in attracting new personnel to the institution. The additional cost of the program during the first summer was $13,000. Subsequently, no extra funds have been involved.

Contact: Dr. Al Corum, Dean of Learning Resources, Belk Library, Appalachian State University, Boone, NC 28608
Telephone: (704) 262-2186

Arizona State University
Tempe, Arizona

Excellence in Engineering and Faculty Development and Orientation Program

The Situation: In 1980, the Arizona State Board of Regents directed the university to undertake a major effort to improve the quality and breadth of engineering education by adding to the staff some vital, high quality, young faculty members. At the same time, university officials concluded that innovative ways were needed to integrate new young faculty members into the established faculty.

The Idea: The university established the following programs to attract and retain high quality young faculty members:

Engineering. In 1980, the College of Engineering and Applied Sciences with the assistance of the university's Advisory Council for Engineering Excellence developed a plan to improve the quality of engineering education and research. One first step of the plan was to provide special salary increases for young engineering faculty members in order to make their salaries more competitive with industry.

Faculty Development. The university established a campus-wide program to enhance the effectiveness of all faculty members in their teaching, research, and service functions. Included were (a) editorial assistance and consultation, (b) videotaping assistance for self-evaluation of teaching performance, (c) seminars on student motivation and performance, and (d) special orientation seminars on such topics as the use of campus libraries, obtaining grants and contracts, and audio-visual instructional design.

Faculty Orientation. Upper-level administrators made efforts to welcome personally new faculty members and to maintain contact with them.

The Results: The programs stopped the drain of young engineering faculty. The university has employed several young professors from industry; committed 37 faculty positions to the Excellence program; increased research funding; and conducted a large-scale fund-raising activity for developing an engineering education extension arrangement in which faculty members teach advanced courses to professional engineers at their job sites. Administrators believe that the programs have been effective in encouraging new faculty members to remain at the institution.

Contact:

Excellence in Engineering
Dr. George C. Beakley, Associate Dean, College of Engineering and Applied Sciences, Arizona State University, Tempe, AZ 85287 Telephone: (602) 965-1726

Faculty Development and Orientation Program
Dr. Darwyn E. Linder, Executive Director and Professor of Psychology, Program for Faculty Development, Arizona State University, Tempe, AZ 85287
Telephone: (602) 965-6739

Arrowhead Community College, Itasca Campus
Grand Rapids, Minnesota

Comprehensive Junior Faculty Development

The Situation: The prospective decline in the number of young people at the Itasca campus led the state government to recommend reductions of staff, programs, and services. To reduce the impact of the cutbacks on young faculty members, the college established a number of new programs.

The Idea: The new programs, intended for older, professionally established students to be taught by young faculty members, include:

Computer Science. A two-year associate degree program in computer science taught by a young instructor recruited from industry (supported by a grant from the Blandin Foundation);

Business Management. A professional development training program in customer relations, communications, computers, and tax planning for area businesspeople, given in the evenings or on weekends (supported by the Blandin Foundation);

Career Development. A career development program for women, with instruction in decision making, goal setting, and job finding, as well as individualized counseling and instruction (with federal government and foundation funding); and

Human Services. A program to train students to work in mental health facilities, mental retardation programs, early childhood education, and nursing homes, all coordinated by a young instructor who arranges workshops and seminars for students (supported by the Blandin Foundation).

The Results: Enrollment in all of the programs has increased steadily, opening new opportunities for young faculty members. Administrators report that the community's image of the campus has improved and that other campuses are adopting similar programs.

Contact:

Computer Science Program
Dr. Patricia Guyer, Coordinator, Itasca Campus, Arrowhead Community College, 1851 E. Highway 169, Grand Rapids, MN 55744 Telephone: (218) 327-1760

Business Management Program
Dr. Michael Johnson, Coordinator, Itasca Campus, Arrowhead Community College, 1851 E. Highway 169, Grand Rapids, MN 55744 Telephone: (218) 327-1760

Career Development for Women
Dr. Cathy Bengtson, Coordinator, Itasca Campus, Arrowhead Community College, 1851 E. Highway 169, Grand Rapids, MN 55744 Telephone: (218) 327-1760

Human Services Program
Dr. Robert Gephart, Coordinator, Itasca Campus, Arrowhead Community College, 1851 E. Highway 169, Grand Rapids, MN 55744 Telephone: (218) 327-1760

Austin College
Sherman, Texas

Faculty Career Development Program

The Situation: Austin College was concerned about retaining able, non-tenured junior faculty and sought ways to help them grow professionally and personally. It was important that new young faculty members develop fresh interests and competencies, become more self-reflective about career development goals, and improve their understanding of self-evaluation and accountability.

The Idea: In 1975, the college established a program for newly appointed faculty members designed to provide assistance in (a) developing new interests and competencies, (b) assessing career development goals, and (c) understanding evaluation procedures. Junior faculty members were linked up with career development advisors who helped them prepare written five-year career plans to support each one's needs and goals.

The Results: Under this program, funded with a $1 million endowment from the Sid W. Richardson Foundation, 110 faculty members have received grant support to develop their careers. Since 1976, 16 junior faculty members have achieved tenure after completing a written five-year career plan and about the same number have been assisted in finding other positions.

Contact: Dr. A. J. Carlson, Acting Dean of the Faculty, Austin College, 900 North Grand Avenue, Sherman, TX 75090
Telephone: (214) 892-9101 x226

Birmingham-Southern College
Birmingham, Alabama

Program for Working Adults, Executives in Residence, and Assistance for Young Faculty

The Situation: Birmingham-Southern found that the college needed to expand the services offered to the community, increase job opportunities for young faculty members, strengthen the college's ties with the local business community, and improve young faculty members' teaching ability (inasmuchas good teaching is the most important criterion for achieving tenure).

The Idea: The college proceeded to meet its needs by establishing:

The Program for Working Adults. Starting in 1975, the college began to meet the educational needs of working adults by offering courses leading to degrees during convenient time periods either during the day or at night. The college planned to employ several new young faculty members to carry on part of the teaching involved.

Executives in Residence Program. Starting in 1977, the college invited local businesspeople to spend two weeks at a time on campus sitting in on regular classes, seminars, and special lectures. Faculty members worked closely with the businesspeople and developed continuing ties with them.

Assistance for Young Faculty. Starting in 1980, new faculty members were offered opportunities to improve their teaching skills. Each year four senior persons act as mentors for new faculty members and provide assistance on developing adequate grading practices and examinations, conducting lectures and discussions, evaluating classroom performance through observing classes and studying videotapes, and improving ongoing teaching.

The Results: Enrollments have doubled during the past seven years, opening about 25 new positions for young faculty members. The Program for Working Adults has been a major factor in the enrollment increase. About 100 businesspeople have participated in the Executives in Residence Program and there are now more applicants for these positions than can be accommodated. Some 20 new faculty members have participated in the assistance program. Overall, college officials feel that the various programs have helped retain promising young faculty members by providing practical support.

Contact: Dr. W. Edmund Moomaw, Vice President for Academic Affairs, Birmingham-Southern College, 800 8th Avenue West, Birmingham, AL 35204
Telephone: (205) 328-5250

Boston College
Chestnut Hill, Massachusetts

Faculty Development: Orientation Model for Part-Time Faculty

The Situation: Young part-time faculty members were attracted to Boston College's well-established quality evening program and extensive curriculum. The administration sought ways to provide these persons with an overview on the college's needs and expectations from faculty, a perspective on the teaching of adult students, higher motivation, and professional growth opportunities.

The Idea: In 1978, the college established an orientation and professional development program to better prepare and sensitize part-time faculty to the educational needs of the growing adult learner population and the college's approach to serving those needs. The program featured a short one-session seminar supplemented by handbooks, bulletins, and counseling publications which emphasize the effective teaching of older students and present the institution's philosophy and goals, operational policies and procedures, and available resources and services, all with emphasis on collegiality among faculty and administrators.

The Results: Faculty members now have a better understanding of the direction Boston College is taking; there is more comprehensive planning of instruction for evening courses.

The college distributed a description of the program, and 200 institutions have used it as a model. Responses to a questionnaire indicated that 30 percent of the institutions reported improved communication between faculty and administration; 25 percent better communication among faculty members; and 11 percent increased teaching effectiveness.

Contact: Dr. James A. Woods, Dean, Boston College, Evening College, Chestnut Hill, MA 02167.
Telephone: (617) 969-0100 x 3456

Bradley University
Peoria, Illinois

College of Engineering and Technology Recruitment of New Engineering Faculty

The Situation: Bradley University has had difficulty in attracting promising young engineering faculty members because the institution lacks the research opportunities other institutions offer and does not grant Ph.D. degrees. Bradley began the 1981 academic year with 14 vacancies in its College of Engineering and Technology.

The Idea: In 1981, a professional advertising agency was hired to develop an advertisement to appeal to qualified potential faculty employed in industry or to young engineers who recently obtained advanced degrees. The advertisement was "targeted" to these two groups and was run as a large display ad in three national trade journals. Officials believed that a potential faculty member's professional engineering experience should be weighted equally with education, and sought to increase the number of applicants by appealing to a wide range of people in the field.

The Results: The university received 136 applications as a result of the advertisement. Thirty-three percent of the applicants had doctoral degrees and 55 percent were employed in government or industry. Five of the most promising applicants have been accepted for faculty positions. Officials say that the advertisement has helped the institution substantially.

Contact: Dr. James B. Matthews, Dean of Engineering and Technology, Bradley University, Peoria, IL 61625
Telephone: (309) 676-7611 x216

Brooklyn College
Brooklyn, New York

Faculty Development Program in Computer Science

The Situation: During the past few years, young faculty members at Brooklyn College have been interested in learning how to use computers in their various disciplines but could not find the time during the academic year. At the same time, the college wanted to overcome a shortage of instructors qualified to teach introductory courses in computer science by retraining personnel from overstaffed departments.

The Idea: The Computer and Information Science Department offered a professional development course during the summer of 1981 designed to:

Provide an opportunity for young faculty members without previous experience to learn computer programming; and

Enable young faculty members with some computer background to learn how to teach introductory computer programming courses.

Faculty who were being retrained received a stipend of $750 for attending the summer program. The cost of instruction was paid out of the college's regular budget.

The Results: Twenty young faculty members without previous experience with computers attended the course, and nine others were retrained in teaching computer science. Four young faculty members are already teaching computer science courses; several more are expected to do so in the near future. The course was so successful that a similar program was held in summer 1982. Also, plans are under way to adopt the program at other institutions in the City University of New York system.

Contact: Dr. Mordecai Gabriel, Vice President for Academic Affairs, Brooklyn College, Bedford Avenue and Avenue H, Brooklyn, NY 11210
Telephone: (212) 780-5202

Brown University
Providence, Rhode Island

Program to Attract and Retain Young Faculty Members

The Situation: Brown University found that a large portion of its faculty was tenured, that financial pressures prevented older faculty members from retiring, thus opening up teaching positions, and that the university was not offering adequate incentives to attract and retain promising young faculty members.

The Idea: The university attacked the problem of attracting and retaining promising young faculty members from a number of different directions by:

Offering teaching fellowships (with Lilly Endowment funding) to junior faculty members, giving them released time to develop and teach courses outside of their specialties;

Offering (with Mellon Foundation funding) appointments or tenure to junior faculty members in departments where there is no growth or in which there is already 100 percent tenure;

Offering "first book prize awards" to promising young scholars;

Providing grants (called Wriston Fellowships) to outstanding junior faculty members for released time to complete research projects;

Offering (with support from the Mellon Foundation) young scholars in the humanities opportunities to continue research and do limited teaching at Brown so that they may gain valuable experience and remain in academia; and

Providing important financial incentives for early retirement to older faculty members.

The Results: Each effort has made a small contribution in attracting and retaining young faculty members. Together, the various approaches have had an important beneficial effect on faculty morale.

Contact:

Early Retirement Program
Dr. Frank Durand, Associate Provost,
Brown University, Providence, RI 02912
Telephone: (401) 863-2313

Lilly Teaching Fellows
Dr. Harriet Sheridan, Dean of the College,
Brown University, Providence, RI 02912
Telephone: (401) 863-2573

Mellon Fellowships and Young Humanist Program
Dr. Maurice Glicksman, Provost and Dean of the Faculty, Brown University,
Providence, RI 02912
Telephone: (401) 863-2706

First Book Prize Awards
Dr. Stephen Graubard, Editor, Brown University Press, Brown University,
Providence, RI 02912
Telephone: (401) 863-2132

Wriston Fellowships and Grants from the Mellon Foundation
Dr. Mark Curran, Executive Officer, Brown University, Providence, RI 02912
Telephone: (401) 863-3205

Bryn Mawr College
Bryn Mawr, Pennsylvania

Junior Faculty Research Leave Program

The Situation: Despite the strength of its reputation and the excellence of its student body, Bryn Mawr frequently faced strong competition when seeking to hire younger faculty. Many young faculty members felt that heavy teaching loads prevented them from doing the research needed to establish the necessary credentials for tenure; or, if tenure were not forthcoming, they had little to offer other potential employers in the way of research experience or publications.

The Idea: In 1966, the college established a sabbatical program for junior faculty members with a combination of support from endowments, contributions, and federal and general college resources. The program, open to all assistant professors who have been reappointed to a second term, provides a full year's leave with full pay and fringe benefits in the third, fourth, or fifth year of service.

The Results: Of the 65 assistant professors who have participated in the program, 42 are still on the faculty. Administrators credit the program with helping young faculty members to be better prepared to face tenure review (because of the scholarly research conducted during the year's sabbatical). They feel the program also serves to induce young scholars to seek employment at the college.

Contact: Dr. Suzanne Spain, Assistant to the President, Bryn Mawr College, Bryn Mawr, PA 19010
Telephone: (215) 645-5157

University of California, Berkeley
Berkeley, California

Incentives for Young Engineering Faculty Members and University Research Expeditions Program

The Situation: The number of new faculty members hired at Cal Berkeley's College of Engineering had been decreasing steadily. Because of low salaries and few research opportunities at the college, young engineers frequently overlooked the college and accepted positions with other institutions or private industry. Elsewhere in the institution, young faculty members had difficulty in finding support for research projects.

The Idea: The university established two programs to alleviate these problems:

Incentives for Young Engineering Faculty Members. Since 1980, the College of Engineering has obtained almost $250,000 from major corporations and university funds to develop research opportunities for young faculty members, and arranged with industrial donors to offer them consultancies and research contracts. With corporate contributions, young faculty members are provided with summer salaries to initiate research projects. Support is made available to purchase equipment for research.

University Research Expeditions Program. In 1978, a research expeditions program was set up to provide funds, personnel, and field assistance for field research in the natural and social sciences. Members of the general public wishing to participate in a field research project pay a fee to the program and offer their services to a researcher, usually a young faculty member, as field assistants. Funds from private donations, the National Science Foundation, and the university supplement the fee, providing young faculty members with operating budgets and staff for their field research.

The Results: In two years, 20 newly recruited faculty members have participated in the College of Engineering program. In 1980, the college was able to hire 17 new faculty members, most of whom were younger engineers, as compared with six in 1979. Officials say that as a result of the program the college has been able to recruit and retain high quality young people as faculty in academic areas of great demand. The university research expeditions program has supported more than 30 research projects by new young faculty members.

Contact:

Incentives for Young Engineering Faculty Members
Dr. Karl S. Pister, Dean, College of Engineering, University of California, Berkeley, Berkeley, CA 94720
Telephone: (415) 642-5771

University Research Expeditions Program
Dr. Jean G. Colvin, Director, University Research Expeditions Program, University of California, Berkeley, Berkeley, CA 94720
Telephone: (415) 642-6586

University of California, Davis
Davis, California

Incentives for Engineering Faculty

The Situation: The College of Engineering at the University of California, Davis had difficulty in hiring qualified younger faculty members, especially in such areas as computer science. When competing for promising young personnel, the college often had been forced to match the salary offers and non-financial benefits of other institutions and private industry.

The Idea: The college designed a program to help attract and retain younger faculty members, including:

Salary increases, which put engineering faculty on higher pay level scales than most of the other departments on campus;

Loans at 12 percent interest for the purchase of homes;

Summer research support for two months a year for two years and lighter teaching or administrative loads;

The opening of tenured positions for younger faculty by arranging phased, early retirement for older faculty members;

Opportunities for tenure in four or five years, instead of the usual seven or eight years;

Priority in obtaining research equipment;

Faculty development conferences, two annually, in which new faculty members learn about university services and opportunities for advancement from deans and senior faculty.

The Results: College officials believe that these efforts have been instrumental in recruiting and retaining outstanding young faculty members, including three in the computer science department.

Contact: Dr. John D. Kemper, Dean, College of Engineering, University of California, Davis, Davis, CA 95616
Telephone: (916) 752-0555

Carnegie-Mellon University
Pittsburgh, Pennsylvania

The Robotics Institute and Mentorship Program for Junior Faculty

The Situation: Throughout the university, junior faculty members, particularly women and minorities, have had difficulty in gaining access to informal collegial networks which could improve their chances for successful careers. This situation has been an obstacle to attracting young qualified people to the university and retaining them once they are there. Elsewhere in the institution, officials in the College of Engineering found that efforts to recruit and retain promising younger faculty members were hindered by the lack of both modern research equipment and funding sources for research projects headed by junior faculty members.

The Idea: To draw outstanding young faculty members to the institution and retain them, Carnegie-Mellon initiated the following two programs:

In 1979: **the Robotics Institute,** a cooperative university/government/industry research and development organization focusing on the industrial possibilities of robots. With funds from government agencies and industry, the institute purchased modern, sophisticated equipment and made it available to younger faculty members. The institute also arranged for researchers from government agencies and private industry to collaborate with young faculty members on research projects.

In 1980: **a mentorship program** in which senior faculty members assist junior faculty with research, teaching, acquiring funding, and developing professional contacts. The program is designed to encourage junior faculty persons to remain in academia and achieve senior-level positions.

The Results: In 1981, the Robotics Institute obtained about $4.5 million from industry and government for equipment and research support. The level of funding for younger faculty members has increased and has been instrumental in attracting and retaining them. With the cooperation of senior faculty members, 55 assistant professors and instructors participated in the mentorship program in its first year and 37 in the second year. University officials believe that this program encourages greater participation in the campus community by junior faculty, particularly women and minorities, thus attracting promising recruits to the institution and helping to retain them.

Contact:

Robotics Institute
Dr. Thomas J. Murrin, President, Public Systems Company, Westinghouse Electric Corporation, Westinghouse Building, Gateway 2385, Pittsburgh, PA 15219
Telephone: (412) 255-3110

Mentorship Program
Dr. Roland M. Smith, Associate Provost for Academic Affairs, Carnegie-Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213
Telephone: (412) 578-3627

Central Pennsylvania Consortium
Carlisle, Pennsylvania

Faculty Teaching Workshops

The Situation: Members of The Central Pennsylvania Consortium (four small liberal arts colleges — Dickinson, Franklin and Marshall, Gettysburg, and Wilson) place great emphasis on teaching excellence. Younger faculty members, highly trained in their respective fields, are often not trained in teaching and are not prepared adequately to do the high quality teaching necessary for promotion and tenure.

The Idea: Starting in 1974, the consortium with its own funds organized a series of teaching workshops for young faculty members, directed by an outside specialist. The workshops provide simulated classroom situations, discussion sessions, written exercises, and videotape reviews of teaching performance.

The Results: Participants report that the workshops are beneficial, provide them with better insight into the teaching process together with improved teaching skills, and give them greater confidence in their teaching abilities. As a result of consortium successes, some of the individual colleges have organized their own workshops to meet the needs of particular departments.

Contact: Dr. Beverley Eddy, Director, Central Pennsylvania Consortium, c/o Dickinson College, Carlisle, PA 17013
Telephone: (717) 245-1490

College of Charleston
Charleston, South Carolina

Interdisciplinary Research/Career Planning Program

The Situation: Young untenured faculty members at the College of Charleston were expected to do research, but lacked funding and support from colleagues. Young tenured faculty members complained of increasing professional insulation and career immobility. The college wanted to retain these young persons, but did not have the funds to establish a program for this purpose.

The Idea: In 1980, with start-up funds from the Lilly Foundation, the college designed a program to encourage interdepartmental research and career planning for young faculty members by:

Providing research grants, which their departments would "match" individually;

Offering opportunities to develop interdisciplinary programs for teaching and research;

Permitting the accumulation of released time for research by "banking" overtime teaching; and

Organizing career development retreats.

The college now supports the program from its own funds.

The Results: The college has awarded 15 research grants since the program began. Twenty-five young faculty members have participated in the career planning retreats. Officials say that the program has stimulated scholarly activity in the institution, has given greater professional direction to young faculty members, and has helped to retain them on campus.

Contact: Dr. Paul Hamill, Assistant Academic Vice President for Faculty Research and Development, College of Charleston, 66 George Street, Charleston, SC 29424
Telephone: (803) 792-5672

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University of Chicago
Chicago, Illinois

Postdoctoral Instructorships

The Situation: The University of Chicago found that promising young postdoctoral students, frustrated by having few opportunities to teach stimulating courses and to do research in their fields, were seeking positions elsewhere.

The Idea: In 1975, in order to help alleviate the young faculty problem, the University of Chicago created the William Rainey Harper Instructorships. Young postdoctoral students are appointed to two-year faculty positions at regular annual salaries and are assigned to teach two intellectually challenging humanities or social science courses (six hours of classwork) each week. With the relatively light course load and freedom from administrative duties, these instructors have time to carry on research. They are given office space, access to libraries, and full faculty privileges as well as support from junior and senior faculty members. The university has assumed the total cost of the program.

The Results: Fourteen young scholars participated in the program in the academic year 1981-82. Administrators report that almost every participant has fulfilled the terms of the appointment and has gone on to a regular teaching assignment. In some cases, even with offers for tenure-track positions elsewhere, candidates have accepted Harper Instructorships for the experience they offered. The challenging course work, research opportunities, and institutional and faculty support provide much-needed career transitions for gifted young scholars. Officials believe that as a result of the program, the university is in a stronger position to recruit promising scholars and that the Harper Instructorships help to retain them in academic positions.

Contact: Dr. Gerald Fetner, Director, Foundation Relations, University of Chicago, 5801 Ellis Avenue, Chicago, IL 60637 Telephone: (312) 962-7568

Christian Brothers College
Memphis, Tennessee

Comprehensive Benefit and Development Program for Young Faculty Members

The Situation: Christian Brothers College has kept tuition costs moderate to ensure access to higher education for more students. However, faculty salaries are lower than the national average, and the institution has had difficulty in attracting and retaining young faculty members in such areas as business, engineering, and the sciences.

The Idea: In 1978, the college established a "package" of fringe benefits and professional development opportunities for young faculty members, including:

Free tuition to the spouse and/or children of young faculty;

Permission to use one day a week for outside consulting;

Opportunities for junior faculty to supplement salaries through teaching at the college's evening division or at other institutions in the city;

A program enabling faculty members to establish training programs in private industry at regular consultant fees;

A full-time grant request writer to assist in developing research proposals;

Credit toward tenure for appropriate educational experience;

Moving expenses, salary advances, loans, and temporary on-campus housing; and

Secretarial assistance while working toward advanced degrees or writing for publication.

The cost of the program is low, as many of the benefits involve little or no expense for the institution.

The Results: The number of faculty members under the age of 35 employed by the college has increased steadily since 1977. Administrators say that the combination of incentives has helped the institution recruit and retain promising young faculty members.

Contact: Dr. Emily D. Mathis, Assistant to the President, Christian Brothers College, 650 East Parkway South, Memphis, TN 38104
Telephone: (901) 276-7424

Clemson University
Clemson, South Carolina

Faculty Research Initiation Program

The Situation: Officials at the College of Engineering at Clemson University believed that their institution had failed to keep pace with industrial competition for young personnel by not providing adequate salaries, benefits, and opportunities for professional growth. The college had from eight to ten faculty vacancies per year out of approximately 120 positions; and, the resignation rate had been roughly equal to the hiring rate.

The Idea: In 1967, college administrators, seeing a potentially serious shortage of engineering faculty, developed a multi-faceted program of incentives for use in recruiting young faculty members, including:

Two months' summer salary support for research in the first year;

Half-time teaching loads for the first two years;

Provision of graduate student assistants;

High priority for purchasing new equipment;

Sponsorship of one conference trip or a trip to solicit research support; and

Provision of senior faculty mentors and administrative consultants for assistance in developing proposals for research support.

The Results: The program has gained support from private industry for salary supplements and equipment for younger faculty members, and has utilized the services of graduate assistants and visiting faculty to meet teaching loads. Thirty-five younger, newly recruited faculty members have benefited from the program. The college reports that, as a result of the program, more than 50 percent of the candidates for faculty positions who have been offered employment have accepted, and a substantial volume of research has been funded.

Contact: Dr. B. E. Gilliland, Associate Dean of Engineering, Clemson University, Clemson, SC 29631
Telephone: (803) 656-3201

Colby College
Waterville, Maine

Pre-Tenure Sabbatical Leave Policy

The Situation: Due to its location away from urban centers and major research sources, Colby College faces difficulty in attracting and retaining young scholars.

The Idea: A program offering early sabbatical leaves will permit non-tenured faculty members to undertake or complete creative activities or research projects. This pre-tenured leave will consist of one semester at full salary or two semesters at half salary.

The Results: The program will begin in 1982-83.

Contact: Dr. Paul B. Dorain, Vice President for Academic Affairs, Colby College, Mayflower Hill, Waterville, ME 04901
Telephone: (207) 873-1131 x2204

Colorado School of Mines
Golden, Colorado

Salary Supplements and Research Assistance for Young Engineering Faculty Members

The Situation: The Colorado School of Mines found that funding from the state government was too low to provide adequate salaries, benefits, and research opportunities for younger faculty members. Many of the most promising junior faculty members were considering accepting positions in private industry.

The Idea: In 1975, the institution began a campaign to impress upon private industry the need for maintaining a strong engineering faculty and to raise funds for this purpose. The funds raised (a) provide total or partial support of young faculty members' salaries; and (b) finance equipment, professional travel, and secretarial-technician assistance.

The Results: Since the program's inception, the institution has raised about $33 million, 25 percent of which has been used to raise salaries, including those of new young faculty members, and to provide research assistance, and 30 percent to improve equipment and facilities. Sixty faculty members have received salary and research assistance in the last five years. Last year, approximately $540,000 was disbursed to faculty, and officials say that these efforts have been significant in helping to attract and retain young faculty members.

Contact: Dr. Guy T. McBride, Jr., President, Colorado School of Mines, Golden, CO 80401 Telephone: (303) 273-3280

Colorado State University
Fort Collins, Colorado

Program to Finance
Scientific Equipment

The Situation: Officials at Colorado State University believed that a critical part of the problem in attracting and retaining highly qualified young faculty members was the unavailability of the most up-to-date equipment for research. Colorado State lacked endowments or state funds to provide modern equipment necessary for attracting and keeping outstanding young scientists and engineers.

The Idea: In 1968, the university, working through the Colorado State University Research Foundation, launched a program to acquire the most modern research equipment available. The Research Foundation used various leasing and borrowing arrangements to obtain equipment, and then arranged for the university to charge portions of the [illegible] acquisition costs to the federal, state, or private agencies supporting research projects. The program enabled the university to provide younger faculty members with research equipment at the beginning of a project.

The Results: Officials feel that the $[illegible] million of scientific research equipment, purchased with borrowed money, has enabled the university to achieve a $50 million annual research program; and that the high-powered research environment not only draws younger scientists and engineers to the university but helps retain them on campus.

Contact: Dr. Lionel V. Baldwin, Dean, College of Engineering, 111 Engineering Building, Colorado State University, Fort Collins, CO 80523
Telephone: (303) 491-6603

University of Colorado at Boulder
Boulder, Colorado

Junior Faculty Development Award

The Situation: New young faculty members accustomed to using the most modern research facilities and equipment at their institutions of graduate study often found that research facilities at the University of Colorado were not up to the highest standards. Also, assistant professors had difficulty in obtaining external research funding which was more often available to older, established faculty members.

The Idea: In 1981, the university established a grant program, awarded on a competitive basis, for young faculty members to support research. Three awards of $15,000 each or two each of $15,000 and $7,500 are made available to full-time, untenured faculty members with a record of publication and an outline of research plans. A panel of judges consisting of students, faculty members, and administrators selects the grantees. The program is supported by funds from student fees.

The Results: Last year 63 junior untenured faculty members applied for the four awards presented. Officials say that the program has helped retain younger faculty members on the campus by stimulating interest in research and by recognizing their achievements and potential.

Contact: Dr. Hunter R. Rawlings III, Associate Vice Chancellor for Instruction, Campus Box B-40, University of Colorado at Boulder, Boulder, CO 80309
Telephone: (303) 492-5094

Cooper Union for the Advancement of Science and Art
School of Engineering
New York, New York

Incentives for Young Engineering Faculty Members

The Situation: Cooper Union has had difficulty in attracting and retaining young engineering faculty members inasmuch as the institution is located in an area with a high cost of living and limited available housing.

The Idea: In 1978, the School of Engineering established a variety of coordinated programs to attract and retain young faculty members, including:

Offering new young faculty members developmental funding up to $4,000 for laboratories and research during their first summer of employment;

Providing released time for new faculty members of at least one course per semester in the first year of teaching for course preparation and professional development;

Providing full expenses for travel to professional meetings and for attendance at short courses;

Assisting young faculty members in writing proposals and in making professional and industry contacts; and

Reducing the amount of time of achieving tenure to a minimum of three years.

The Results: Eight young faculty members have been hired since the program began. Funds generated from research by young faculty members have contributed to the development of new laboratories which, officials say, will help to draw additional young people to the institution.

Contact: Dr. Chor-Weng Tan, Dean, School of Engineering, Cooper Union for the Advancement of Science and Art, 51 Astor Place, New York, NY 10003
Telephone: (212) 254-6300

Cornell University
Ithaca, New York

Postdoctoral Teaching Fellowships, Young Humanist Program, and Incentives for Young Engineering Faculty Members

The Situation: Increasing budgetary pressures combined with an over-abundance of middle-aged faculty hired in the 1960s made it difficult for Cornell to hire, retain, or promote younger faculty in many departments. The College of Engineering had particular difficulty in recruiting young high quality chemical engineering for faculty members.

The Idea: The university established three programs to attract and retain young faculty members:

Postdoctoral Teaching Fellowship Program. In 1975, with a grant from the Mellon Foundation, Cornell began offering two-year fellowships each year to six or seven recently graduated humanists; they are to teach one course each term and carry on research or advanced study.

Young Humanist Program. In 1980, with university funds and a grant from the Mellon Foundation, Cornell's College of Arts and Sciences established a capital fund for new appointments or promotions of new young scholars in the humanities. Departments within the college may draw "loans" from the fund to help pay a young faculty member's salary. These loans are tied to older faculty members' future retirements; there will be a substantial difference between their salaries and those of junior replacements. The money thus saved will be returned to the fund so that the college can continue the program. This is a temporary program designed to provide flexibility in recruiting promising young scholars and retaining them until faculty retirements make it possible to absorb the positions permanently.

Engineering Faculty Program. In recent years, the College of Engineering initiated programs to recruit and retain young faculty members by providing (a) light course loads for new faculty members, (b) assistance in finding employment for young faculty members' spouses, (c) summer salaries and research funds for young faculty, (d) state-of-the-art research centers in which industrial researchers collaborate with faculty members, and (e) tours of the campus for prospective employees, conducted personally by college officials. Funds from private industry and foundations financed these efforts. ■

Cornell University
(continued from preceding page)

The Results: Over the years, 22 young scholars have been appointed as postdoctoral fellows. In July 1980, the Young Humanist Program also provided partial or total funding for salaries for five young scholars, with two additional positions guaranteed in 1981. Three chemical engineering faculty members were hired in 1981; and many more faculty members are actively using the engineering research centers on campus. Officials believe that the steps taken in the new programs have helped to bring leading young candidates for teaching positions to the university, have significantly raised faculty morale, and have helped to retain new faculty members.

Contact:

Postdoctoral Teaching Fellowship Program
Dr. Anna Geske, Program Director, Andrew D. White House, Cornell University, Ithaca, NY 14853
Telephone: (607) 256-7274

Young Humanist Program
Dr. Alain Seznec, Dean, College of Arts and Sciences, Goldwin Smith Hall, Cornell University, Ithaca, NY 14853
Telephone: (607) 256-4146

Engineering Faculty Program
Dr. Thomas E. Everhart, Dean, College of Engineering, Carpenter Hall, Cornell University, Ithaca, NY 14853
Telephone: (607) 256-4326

Davidson College
Davidson, North Carolina

Mortgage Interest Subsidy Program

The Situation: Young faculty members at Davidson College were having extreme difficulty in acquiring housing near the college. Many of them had been hired directly from graduate school and had little, if any, resources to invest in a home. College officials expected faculty members to live in the college community, but housing costs in Davidson were higher than in neighboring communities. The situation was a desperate one for young faculty who wished to own a home, and college officials recognized the potential problem in attracting and retaining highly qualified young faculty due to the rapidly escalating housing costs.

The Idea: In 1970, administrators initiated a program to make appropriate housing possible for young faculty. For those young persons interested only in renting a home, the college invested in rental housing. But for newly recruited faculty members wishing to purchase a home, the college provides annual subsidies to help with mortgage loan interest. The subsidy plan is designed specifically for younger faculty members, with proportionately more assistance being given at the beginning of a mortgage-loan period than at the end.

The Results: Since the program started, 27 faculty members have acquired houses and have been receiving annual subsidies. Administrators feel that satisfaction with housing is a key element in attracting young potential faculty members to the college and in boosting morale, resulting in greater retention.

Contact: Dr. Robert A. Currie, Business Manager, Davidson College, Davidson, NC 28036
Telephone: (704) 892-2000 x125

Duke University
School of Engineering
Durham, North Carolina

Young Engineering Faculty Recruitment and Retention

The Situation: In the past 15 years, the engineering student body at Duke has increased by 40 percent, research expenditures have grown more than fourfold, and faculty has expanded by only 15 to 20 percent over the same period. These factors, together with increasing competition with industry for high quality personnel, raised concerns about preserving high standards for young faculty.

The Idea: The School of Engineering took the following steps to recruit and retain young faculty:

Limiting student enrollments, allowing for a small, diverse, high quality student body;

Combining bachelor's and master's degree programs, and encouraging highly qualified students to pursue doctoral degrees with the idea of their becoming potential faculty members;

Reducing teaching loads and offering summer research support for young faculty; and

Helping to establish the Research Triangle Park, a state-built research institute which combines the engineering and computer science faculties of three educational institutions, including Duke, with the research staffs of several major corporations in joint research activity. The facility has helped raise the level of research in the School of Engineering at Duke; at the same time, Duke has drawn young scientists from the corporations to the university as adjunct professors.

The Results: In the last 15 years, Duke has not lost an engineering faculty member to industry. Officials say that all of the combined efforts have helped the university attract and retain promising young faculty members.

Contact: Dr. Marion L. Shepard, Professor of Materials Science and Associate Dean, School of Engineering, Duke University, Durham, North Carolina 27706
Telephone: (919) 684-2214

Earlham College
Richmond, Indiana

Teaching Consultant/Professional Development Fund

The Situation: Earlham places great emphasis on teaching; younger faculty members are evaluated (in large measure) for promotion and tenure by their teaching effectiveness. Past attempts at institutional support for the improvement of teaching and teaching-related research floundered because of faculty reluctance to accept outside professional assistance and because of lack of funds for research. In the absence of a successful professional development program, the college felt that it was in danger of losing gifted younger faculty members.

The Idea: In 1976, with support from the Mellon Foundation, Earlham established the position of "teaching consultant" and a fund for professional research.

The consultant, a faculty member selected by colleagues, devotes half-time to counseling other faculty on improvement of testing, course syllabus development, student motivation, etc. All counseling is confidential, thereby alleviating faculty concerns.

The fund provides research support for faculty members, with special benefits for younger faculty who experience difficulty in obtaining outside financial support.

The Results: Since 1976, about 75 percent of younger untenured faculty have participated in the teaching consultant program, with 62 percent receiving professional development funding. Administrators believe that morale among younger faculty members has improved considerably as a result of the program and that classroom effectiveness has been enhanced. Both programs are now fully supported by the college.

Contact: Dr. Len Clark, Provost and Dean of Academic Affairs, Earlham College, National Road West, Richmond, IN 47374
Telephone: (317) 962-6561 x318

University of Evansville
Department of Computer Science
Evansville, Indiana

Program to Train Young Computer Science Faculty Members

The Situation: The Department of Computer Science at the University of Evansville has had to place heavy teaching loads on its faculty and has not been able to offer younger faculty members the research support available at other institutions. Consequently, the department found that it was having difficulty in recruiting and retaining young faculty members to teach computer science.

The Idea: In 1981, the department established a program to train young faculty members teaching elsewhere in the university to teach computer science. The department sought in this way to retain those faculty members rather than losing them to private industry. The program is supported by endowments from private foundations.

The Results: The program has met the department's needs for faculty members to teach computer science courses. Many of the program's participants are under the age of 30, and officials believe that the program benefits the institution and the young faculty members involved.

Contact: Dr. William Mitchell, Associate Professor and Chairman, Department of Computer Science, University of Evansvillle, P.O. Box 329, Evansville, IN 47702
Telephone: (812) 479-2649

Fairleigh Dickinson University
Teaneck, New Jersey

Committee on Faculty Opportunities

The Situation: The average age of a faculty member at Fairleigh Dickinson University is 48 years. Although younger faculty members are beginning to be attracted to the campus, gaps exist between their interests and concerns and those of older faculty. The university offered little support to newly recruited faculty members who felt that the institution did not understand or care about their problems.

The Idea: In 1982, Fairleigh Dickinson introduced a program to meet the personal and professional needs of junior faculty members, including:

An off-campus conference intended to bring senior and younger faculty together to create collegial bonds and to discuss professional issues;

Cultural and scholarly events for both junior and senior faculty members; and

A conference of department chairpersons to increase their awareness of junior faculty problems and how best to deal with them.

The Results: Seventy-five faculty members participated in the program and administrators report that morale among younger faculty has improved substantially. Younger faculty collaborate with one another as well as with older faculty members in efforts to improve curriculum, create new programs for students, and obtain grants from outside agencies. The program is supported entirely by university funds.

Contact: Dr. Ann F. Lucas, Chairman, Committee on Faculty Opportunities, Fairleigh Dickinson University, 1000 River Road, Teaneck, NJ 07666
Telephone: (201) 692-2312

Fashion Institute of Technology
New York, New York

Professional Development Programs

The Situation: The Fashion Institute of Technology (a two-year community college) draws faculty primarily from industry. However, many young technical specialists do not have the teaching expertise required by the institute, feel intimidated by the teaching process, and, therefore, frequently prefer to advance in their own fields rather than enter the academic environment.

The Idea: The institute established cooperative programs to provide teacher training and credentials for technical persons employed as faculty. Bachelor's degree programs were established in cooperation with Empire State College of the State University of New York; and master's degree programs with Teachers College of Columbia University.

The Results: The programs have helped the institute acquire and retain the young people from industry needed as faculty. Twenty faculty members are enrolled in the Empire State program, 75 in the Teachers College program.

Contact:

Dr. Janice Weinman, Vice President, Fashion Institute of Technology, 227 West 27th Street, New York, NY 10001
Telephone: (212) 760-7911

Fayetteville State University
Fayetteville, North Carolina

Faculty Professional Development Program

The Situation: Officials at Fayetteville State University felt that the institution needed a program to keep faculty members informed about the latest developments in their fields. Little had been done to encourage scholarly activity, with the result that the university was poorly equipped to attract high quality young faculty members and to retain them.

The Idea: In 1976, university administrators established a multi-faceted program intended to stimulate academic activity both on and off the campus. The program included two conferences and three workshops annually for faculty on topics such as computers and education; arrangements that enabled faculty members to enroll in courses on campus at no cost; and arrangements for faculty members with two years' service to be eligible for a leave with a stipend to pursue advanced degrees at other institutions. State funds supported the entire program.

The Results: The number of young faculty members hired over the past five years has increased steadily. Although the program has been open to all faculty members, younger members have had the most to gain from paid study leaves and instructional workshops. Administrators believe that the program has fostered a higher quality of instruction and greater participation in faculty research; also that it has attracted young faculty members and provided them with opportunities for career growth resulting in their remaining at the university.

Contact: Dr. Richard A. Hogg, Provost and Vice Chancellor for Academic Affairs, Fayetteville State University, Fayetteville, NC 28301
Telephone: (919) 486-1460

Five Colleges, Incorporated
Amherst, Massachusetts

Associates Program for Young Scholars in Transition and Early Retirees Fellows Program

The Situation: The Five Colleges (Amherst, Hampshire, Mount Holyoke, Smith, and the University of Massachusetts) have found it difficult to offer reappointment or tenure to otherwise highly qualified and desirable faculty during a no-growth period, such as the 1980s. Young scholars who have their contracts terminated while engaged in research projects to improve their qualifications have difficulty in finding employment elsewhere. Older faculty members hesitate to retire due not only to financial reasons but also to an unwillingness to be cut off entirely from classroom and colleagues. Accordingly, the flexibility of these institutions to hire and retain young faculty has been reduced.

The Idea: Five Colleges, Inc. has taken the following steps to draw young faculty members to the five institutions and to retain them:

A research associates program offering two-year appointments has been established for young faculty members whose contracts have been terminated or who are having difficulty finding employment and may, therefore, abandon academic careers. These appointments offer (a) an academic affiliation, (b) access to all five library systems, (c) office space, (d) medical insurance, (e) access to seminars and lectures, (f) the collegiality of faculty in their fields, and (g) temporary teaching assignments at their institutions. Costs of the associates program will be covered by the annual budget for Five Colleges, Inc.

An incentive program is being developed to ease retirees' concerns about their continued involvement in teaching and academic service. Faculty accepting their respective institution's early retirement program will be eligible for nomination as fellows and may be appointed as single course replacements in one of the institutions, thus maintaining academic ties.

The Results: Each of the five institutions will appoint three associates per year for two-year periods, making a total of 30 involved in the associates program in any given academic year beyond the first round of appointments. Administrators estimate that the number of early retirees deciding to take part in the program will be between ten and fifteen per year, based on current early retirements at each institution. Administrators also believe that positions opened by early retirements will allow more flexibility in hiring young faculty and being able to retain them.

Contact: Dr. E. Jefferson Murphy, Five Colleges Coordinator, Five Colleges, Incorporated, Box 740, Amherst, MA 01004
Telephone: (413) 256-8316

Florida State University
Tallahassee, Florida

Early Retirement Plan

The Situation: The university has had a high percentage of tenured faculty and a concentration of older faculty in tenured ranks. Officials were concerned that this situation would prevent the university from employing new young faculty members and from retaining young faculty members seeking tenure.

The Idea: In 1981, the university planned a program for early retirement of older faculty members. Tenured faculty with 30 years of service, or ten years of service upon reaching 62 years of age, would be eligible for the early retirement option. With this option, faculty members would be re-granted tenure on a half-time basis and would teach half-time at one-half salary. The faculty retain all rights and privileges of full-time faculty and access to university facilities and services. Upon reaching the age determined by Social Security for retirement, the faculty member on the early retirement program may continue on the plan or retire completely.

The Results: The plan went into effect in September 1982, and 41 faculty members have chosen the early retirement option. The program participants teach at one-half time, opening 20 positions for younger faculty members. Officials say that by offering older faculty the opportunity to maintain ties with the university, faculty members find early retirement is a more attractive option.

Contact: Dr. Daisy P. Flory, Dean of the Faculties, Florida State University, 314 Westcott Building, Tallahassee, FL 32306
Telephone: (904) 644-6876

Furman University
Greenville, South Carolina

The Scholar as Teacher Program

The Situation: Furman University is representative of undergraduate institutions with strong regional reputations but without full-fledged graduate schools or research opportunites. Furman had difficulty in retaining promising young faculty who often planned to move on to more prestigious institutions.

The Idea: In 1978, the Scholar as a Teacher Program for faculty development was established to meet personal and professional needs of new faculty.

With three-year support from the Lilly Foundation, the program was designed to:

Establish a process for new faculty members to submit proposals for the improvement of their teaching;

Develop a series of seminars on teaching and learning;

Provide opportunities for experienced faculty to develop mentor-novice relationships with new teachers; and

Enable experienced faculty members to serve as in-house consultants on teaching to new faculty.

The Results: The number of voluntary faculty resignations has declined substantially since the inception of the program. Teaching excellence has been improved. Both older and younger faculty have benefited. Furman now fully supports the program from its own budget.

Contact: Dr. Philip C. Winstead, Coordinator of Faculty Development Programs, Furman University, Poinsett Highway, Greenville, SC 29613
Telephone: (803) 294-2024

Georgia Institute of Technology
Atlanta, Georgia

Incentives for Engineering and Computer Science Faculty

The Situation: Georgia Tech found it difficult to attract and keep high quality engineers and computer scientists at a time when the national demand for well-trained persons far exceeded the national supply.

The Idea: The institute launched a major campaign to raise funds from the state, alumni, and private industry to be used to attract and retain young faculty in engineering and computer science. The institute then proceeded to:

Provide family members and spouses of prospective applicants with travel expenses to visit the campus;

Provide newly employed faculty with moving and housing location assistance as well as mortgage subsidies for buying homes;

Offer faculty members credit for their prior experience toward the probationary period for tenure;

Give new faculty members light teaching loads for their first several quarters, freeing them for individual research; offer them assistance in developing research proposals and establishing contacts for consulting; and provide them with funding for research projects;

Offer faculty members scholarships for their children;

Provide salary increases based primarily on merit rather than on length of service; and

Decentralize institutional governance in order to speed response to faculty needs.

The Results: Since the program began five years ago, 107 faculty members, the majority of them under the age of 35, have been hired by the engineering and computer science departments. Administrators say that their ability to maintain and retain a faculty with young, vital professionals is due to the broad range of incentives offered.

Contact: Dr. E. Jo Baker, Associate Vice President for Academic Affairs, Georgia Institute of Technology, Carnegie Building, Atlanta, GA 30332
Telephone: (404) 894-5058

Gordon College
Wenham, Massachusetts

Faculty Professional Development Program

The Situation: Gordon College is located in a metropolitan area with a concentration of leading universities and high technology industries competing for well-qualified young personnel. Coupled with spiraling inflation rates, this situation deterred Gordon's efforts to recruit promising young faculty members. Because older tenured faculty are reluctant to change careers during periods of job insecurity, college officials were having trouble in opening positions for new recruits.

The Idea: Supported by college funds and a grant from the W. K. Kellogg Foundation, Gordon College established a program for individualized faculty development open to all faculty members. Participants submit individual plans for their proposed growth as scholars, teachers, researchers, administrators, or private sector professionals. The college provides support funds for travel, seminars, hiring research assistants, and acquiring research materials. Faculty through short-term placements in business and industry can test the desirability and feasibility of moving out of academia in mid-career.

The Results: An average of 39 faculty members have participated in the program over the past five years. Since 1976, 18 faculty members with an average age of 31 years have been hired, and all but one retained. The college believes that the faculty development program has encouraged innovation and experimentation and has helped attract promising young people to the institution. Several older faculty members who explored other career interests through the program have found employment elsewhere, opening up positions for younger faculty.

Contact: Dr. R. Judson Carlberg, Dean of the Faculty, Gordon College, 255 Grapevine Road, Wenham, MA 01984
Telephone: (617) 927-2300 x204

Hampshire College
Amherst, Massachusetts

Collaborative Teaching, Faculty Employment by Contract, and Sabbatical Program

The Situation: Hampshire College found that many potential young faculty members considering academic careers did not wish to be subject to procedures for acquiring tenure. Also the college's emphasis on teaching excellence sometimes overshadowed young faculty members' interest in research.

The Idea: The college established three programs to attract and retain young faculty members:

In 1970, discipline-based departments were combined into interdisciplinary schools, giving young faculty members opportunities to develop and teach in interdisciplinary programs.

In 1972, a contract system of employment replaced the tenure system. New young faculty members are offered initial contracts of three years and participate fully with older faculty in college decision making.

The second contract runs for four years; succeeding contracts run for ten years until retirement.

Starting in 1973, young faculty members with two years of employment were provided with sabbatical leaves for one semester at full pay to complete or begin research projects. After five years, faculty members are eligible for a year's sabbatical at full pay.

The Results: Administrators say that the new programs have helped attract and retain promising young faculty members because (a) many find the contract system less restricting than the tenure system, (b) young faculty members can have equal participation with senior faculty in forming college policy, and (c) research-oriented faculty members can broaden the scope of their scholarly work through new interdisciplinary programs.

Contact: Dr. Penina M. Glazer, Dean of Faculty, Hampshire College, Amherst, MA 01002
Telephone: (413) 549-4600 x378

Hampton Institute
Hampton, Virginia

Administrative Intern Leadership Program

The Situation: Faculty members seeking self-improvement and upward mobility are often not prepared or trained to assume administrative positions. In an effort to retain and motivate young faculty, Hampton Institute sought ways to assist them in developing administrative leadership skills.

The Idea: A program has been established to provide young faculty with administrative training opportunities under the guidance and direction of experienced academic administrators. Internships will be granted to selected faculty who will act as substitutes during the absence of academic administrators. Although a certificate will be awarded to those successfully completing their internships, the program will not have a direct relationship to promotion, salary, tenure, or evaluation.

The Results: The program has just begun. The first internships will be available in the fall of 1982. Both faculty and administrators are enthusiastic about the idea.

Contact: Dr. James M. Griffin, Director, Faculty Development and Research, Hampton Institute, Box 6226, Hampton, VA 23668
Telephone: (804) 727-5243

Harvard University
Cambridge, Massachusetts

Junior Professorship Chair

The Situation: The history department at Harvard University, in trying to attract and retain young, research-oriented scholars, looked for ways to alleviate the problem of junior faculty members being unable to afford the travel and publishing costs associated with research activities.

The Idea: Using endowment funds, the university established a junior professorship chair in the history department. A non-tenured faculty member will be appointed for a five-year period as an assistant or associate professor and will receive an annual $3,000 research stipend. When the chair becomes vacant, a new appointment will be made.

The Results: The program has just started. The first appointment was made in July 1982.

Contact: Dr. Wallace T. MacCaffrey, Chairman, Department of History, Harvard University, Cambridge, MA 02138
Telephone: (617) 495-2556

Hobart and William Smith Colleges
Geneva, New York

Teaching Internship Program

The Situation: In 1975, there were 110 faculty members at Hobart and William Smith Colleges, 57 percent of whom were tenured. The colleges expected an average of only two retirements per year in the 1980s, and because of slow enrollment growth, were forced to cut back over 30 percent on offers of tenure to junior faculty members. Officials were concerned that the projected low turnover rate and lack of younger faculty members could lead to an insular, professionally stagnant faculty.

The Idea: In 1976, using college funds, officials established a teaching internship program for young graduate students completing their doctoral degrees. The interns are appointed to one-year positions carrying a two-thirds teaching load in a variety of departments. They are supervised by senior faculty who assist them in planning and teaching courses and evaluate their performances. Teaching interns receive full faculty benefits, a housing stipend, and moving expenses.

The Results: Since 1976, the colleges have appointed nine teaching interns from leading colleges and universities. Young people who have participated in the program report that the experience they have gained has been very helpful in their applications for permanent teaching positions. Administrators believe that the program helps to attract promising young people to academic careers when they might otherwise have chosen different professions.

Contact: Dr. Harmon C. Dunathan, Provost and Dean of Faculty, Hobart and William Smith Colleges, Pulteney Street, Geneva, NY 14456
Telephone: (315) 789-8510

Howard University
School of Engineering
Washington, D.C.

Engineering Faculty Incentive Program

The Situation: The scarcity of qualified young applicants for faculty positions in Howard's School of Engineering and the higher salaries offered by private industry have prevented the university from attracting and retaining young faculty members. In addition, officials found that faculty research productivity declined as the percentage of faculty members with tenure increased.

The Idea: In 1982, with a foundation grant, the School of Engineering established the following programs to recruit and retain young faculty members and to stimulate research productivity:

Incentive awards with stipends for faculty members who publish research papers;

Departmental teaching incentive awards for outstanding faculty members selected by students, colleagues, and chairpersons;

Summer fellowships to support faculty as they develop research proposals or complete dissertation research;

Study fellowships to educate faculty members in the use of computers for instruction and research, and to support study in specialized fields of engineering; and

Salary supplements to recruit new young faculty or to retain them at the institution, and grants to junior faculty to develop research projects and computer-based courses of instruction.

The Results: The programs began this year and no results are available as yet. Officials believe that the incentives will help the School of Engineering attract and retain promising young engineers to the institution.

Contact: Dr. M. L. Walker, Jr., Dean, School of Engineering, Howard University, 2300 Sixth Street, N.W., Washington, D.C. 20059
Telephone: (202) 636-6565

University of Illinois,
Urbana Campus
Urbana, Illinois

Incentives for Faculty Recruitment in Microbiology, Faculty Study in a Second Discipline, and Programs to Increase Engineering Graduate Enrollments

The Situation: In 1981, the attempts of the University of Illinois' Department of Microbiology to recruit young faculty members were frustrated because engineering industries offered prospective employees both higher salaries and greater research freedom. In addition, promising young faculty members throughout the university often left the institution for private industry or other institutions in order to acquire expertise in areas of research outside their specialties. And, officials from the College of Engineering foresaw a critical shortage of qualified younger engineering faculty inasmuch as few engineering undergraduate students were pursuing advanced degrees.

The Idea: The establishment of the following activities for junior faculty members:

Microbiology Department Program. Efforts by the department to recruit and retain promising young faculty members including (a) providing transportation for prospective members and their spouses to the university where they meet faculty members in social settings; (b) arranging job interviews for career-oriented spouses; (c) offering unrestricted funds to purchase equipment and hire administrative, teaching, and research assistants; (d) releasing members from teaching assignments for the first semester; and (e) providing support for attending national scientific meetings.

Faculty Study in a Second Discipline. Support for all young members to study in disciplines outside their own. Participants are released from regular duties for one or two semesters to study under colleagues from other disciplines or at other institutions if the university cannot offer necessary expertise.

Engineering College Program. Efforts by the college, using contributions from industry, to encourage larger numbers of the most promising engineering undergraduates to pursue advanced degrees, thereby increasing the pool of prospective young faculty members. The college developed and published a brochure intended to make students aware of graduate school opportunities.

The Results: Department of Microbiology officials have interviewed several promising young candidates who were attracted by the incentives. Since the faculty study in a second discipline program began in 1976, 55 young faculty members have studied in disciplines outside their own. About 95 percent have remained on campus. Most of the participants surveyed say that the program has significantly improved their teaching, research, and career development. The decline in the number of undergraduate engineering students pursuing advanced degrees has stopped and increases are occurring. The college's brochure, "Advancing By Degrees," has been reprinted in ▶

University of Illinois, Urbana Campus
(continued from preceding page)

30,000 copies for use nationwide.

Contact:

Microbiology Department Program
Dr. R. D. DeMoss, Professor and Head, Department of Microbiology, 131 Burrill Hall, 407 South Goodwin, University of Illinois, Urbana, IL 61801
Telephone: (217) 333-1737

Faculty Study in a Second Discipline
Dr. William M. Plater, Associate Coordinator, Advisory Committee on Interdisciplinary Programs, 112 English Building, 608 South Wright Street, University of Illinois, Urbana, IL 61801
Telephone: (217) 333-7108

Engineering College Program
Dr. Howard L. Wakeland, Associate Dean, College of Engineering, 207 Engineering Hall, 1308 West Green, University of Illinois, Urbana, IL 61801
Telephone: (217) 333-3528

Indiana University
Indianapolis, Indiana

School of Nursing Orientation Program

The Situation: Young faculty members at Indiana University were leaving the School of Nursing because their training did not prepare them for roles as educators and scholars in a large university.

The Idea: In 1978, senior faculty members and officials established an individualized orientation program for new young nursing faculty. One week before classes began, senior persons met with young faculty to explain university policies and procedures, introduce them to the clinical facilities, tour the campus with them, and familiarize them with their roles and responsibilities as teachers and researchers. The School of Nursing funded the project and continues to offer it to young faculty members.

The Results: One hundred twenty-one young nursing faculty members have participated in the program, and the number of faculty has risen steadily since the program began: from 140 in 1978 to 170 in 1981. Officials say that the program has helped young newly recruited nursing faculty members adjust to the university and has resulted in higher faculty retention rates.

Contact: Dr. Ann Marriner, Associate Dean, School of Nursing, Indiana University, 1100 West Michigan Street, Indianapolis, IN 46223
Telephone: (317) 264-7901

University of Iowa
Iowa City, Iowa

Faculty Scholars Program

The Situation: Officials at the University of Iowa were concerned that support for research and professional development of junior faculty members was inadequate. At a time of declining resources, the university wanted to ensure that high levels of teaching and research were maintained among young faculty members.

The Idea: The university established the Faculty Scholars Program to encourage research and creative activity by assistant and associate professors. Faculty scholars are selected on a competitive basis and are granted released time (usually one semester each year) for a period of three years to conduct research or engage in other creative activities. Funds for travel and other expenses are made available to the recipients, and the home department or college of each scholar receives additional discretionary funds of $2,500, as well as the cost of replacing faculty.

The Results: The first faculty scholars were appointed in February 1982. Officials say that the program will provide young scholars with incentives to join the university's faculty, and will help to retain them once they are appointed.

Contact: Dr. Fredrick Woodard, Associate Dean of the Facuities, University of Iowa, 111 Jessup Hall, Iowa City, IA 52242
Telephone: (319) 353-5383

Jackson State University
Jackson, Mississippi

Teaching Fellowships and Research Institute

The Situation: Jackson State, a predominantly black institution striving for academic excellence, felt that its challenge was (1) to provide an atmosphere which would encourage professional growth and development, and (2) to assist junior faculty in fulfilling their research ambitions.

The Idea: In 1980, a dual-focused program for junior faculty was launched to encourage and facilitate both quality instruction and research through:

A fellowship program to provide time and money for five to eight persons each year to engage in research specifically aimed at enhancing teaching; and

A research institute offering fellowships to encourage and facilitate scholarly publications or to conduct research.

The Results: The program, funded by the Charles Stewart Mott Foundation and the Lilly Endowment, has enabled approximately 45 percent of junior faculty members (each with less than four years' service) to seek development opportunities. The fellowship program has involved 12 second- and third-year faculty members; the research institute has granted fellowships to an additional six persons. Of those participating in the dual program, three faculty members have secured large grants for research or program development and three have received significant promotions. A majority of those involved are expected to become tenured.

Contact: Dr. Velvelyn B. Foster, Professor of History and Social Science Education, Jackson State University, 1400 JR Lynch Street, Jackson, MS 39217
Telephone: (601) 968-2181

University of Kansas
Lawrence, Kansas

Intra-University Visiting Professorships

The Situation: The university found that an obstacle to attracting and retaining promising young faculty members in the College of Liberal Arts and Sciences has been the limited number of tenure-track positions available. Older faculty members have been reluctant to retire, change careers, or seek positions in other institutions, and younger faculty members have had few opportunities to advance or to receive tenure.

The Idea: In 1980, to help open up tenured positions for younger faculty members and to expand faculty career options, the college established a cross-departmental faculty exchange program. Faculty members seeking experience in fields other than their own are given funds for study and a year's release from departmental duties. They can teach or take courses in other departments. The program received foundation support during the first two years; the only stipulation accompanying the funds was that only faculty members with 20 years' experience could participate. The program is now supported totally by university funds and is open to younger faculty members as well.

The Results: In two years, 12 faculty members have participated in the program. Administrators say that some older participants are seriously considering changing their teaching fields, thus opening tenured positions for younger faculty.

Contact: Dr. Sally Yeates Sedelow, Associate Dean, 206 Strong Hall, University of Kansas, Lawrence, KS 66045
Telephone: (913) 864-3661

Loyola University of Chicago
Chicago, Illinois

Career Development Program

The Situation: Loyola University felt that it should assist faculty members to enrich and develop their careers, and, when appropriate, to seek careers outside of the university. New positions for younger faculty would then become available.

The Idea: Loyola established a program providing a supportive environment to assist faculty and administrators to explore career enrichment possibilities. A series of workshops focused on:

Career expansion,

Exchanges with other universities,

Placement in business/industry/government, and

Opportunities for growth and development.

The program began in 1978-79 with a three-year grant from the Fund for the Improvement of Postsecondary Education, and is currently continuing with university funds.

The Results: Over the three-year period, 31 faculty, professional staff, and administrators have been assisted in developing alternative careers, opening up positions for young faculty members. Seventy-five workshops provided 750 faculty, staff, administrators, and spouses with background on integrating personal and professional growth, financial and time management, and skills assessment.

A national dissemination conference, funded by a portion of the government grant, showed 24 other colleges and universities how to carry on career development for their personnel.

Contact: Dr. Robert M. Barry, Director, Career Development Program, Loyola University of Chicago, 6525 N. Sheridan Road, Chicago, IL 60626
Telephone: (312) 274-3169

Macalester College
St. Paul, Minnesota

Faculty Development Program for Young Faculty

The Situation: Administrators at Macalester College felt that young non-tenured faculty were unable to pursue scholarly activities and that the college should find ways to give support and provide funding for professional growth and development.

The Idea: The college provided financial support from its annual operating budget and sought grants for research and development opportunities for new faculty.

The Results: Since 1978, faculty members have been given funds from the college operating budget to attend and participate in professional meetings. In 1980-81, 110 grants of up to $350 each were awarded, with 17 going to younger faculty. In 1977, a five-year grant was obtained from the Mellon Foundation of which $8,000 has been allocated each year in the form of $500 grants for research and participation at professional meetings. In the past four years, 56 faculty, ten of whom are younger members, received one or more awards. Beginning in the summer of 1982, a three-year grant from the Bush Foundation will provide:

Four colloquia and two symposia each year, with one to address special needs of younger faculty;

Twenty to 40 grants of $200 for seminar and colloquia participants;

Nine research grants of $2,000 each;

Twelve grants of $1,000 each covering research-related expenses; and

Two to ten grants of $500 for professional activities.

Contact: Dr. Jack E. Rossmann, Vice President for Academic Affairs, Macalester College, 1600 Grand Avenue, St. Paul, MN 55105
Telephone: (612) 696-6160

Madonna College
Livonia, Michigan

Multi-Year Contracts—An Alternative to Tenure

The Situation: During the past decade, enrollment at Madonna College grew by 300 percent as a result of the establishment of a number of innovative academic programs (such as criminal justice, business administration, gerontology, emergency medical technology, nursing, and sign language training for teachers of the deaf). Many new faculty members were employed. The challenge to the college was to:

Provide enough economic security to retain the new faculty without committing the college to tenure for an unreasonably high proportion of its faculty; and

Encourage young faculty members to study for terminal degrees.

The Idea: Starting in 1979, Madonna offered multi-year contracts to new faculty members on a progressive time schedule as follows:

First, a one-year contract, renewable for an additional year, would be offered.

Then, a two-year contract would be available upon recommendation from the department chairperson and the academic dean.

If prior contracts were completed successfully, a three-year contract renewable in continuous three-year segments would be offered.

Additional costs to the college are not involved because faculty are hired or retained according to budget and enrollment projections.

The Results: The program has enabled Madonna College to retain capable young faculty members. Through faculty professional development and goal setting, these persons have progressed toward doctoral and other advanced degrees. During the first year of the program, 11 faculty members became eligible for a multi-year contract. In the 1982-83 academic year, 51 percent of the faculty will become eligible for multi-year contracts.

Contact: Sister Mary Francilene, President, Madonna College, 36000 Schoolcraft Street, Livonia, MI 48150 Telephone: (313) 591-5046

University of Maine at Augusta
Augusta, Maine

Teaching Refinement Program

The Situation: The University of Maine at Augusta found it necessary to develop programs to improve and refine the quality of teaching skills of young faculty as well as to provide them with opportunities for personal and professional growth.

The Idea: The university trained senior faculty members to assist younger colleagues to organize subject matter in better fashion, improve classroom activities, develop new ways to motivate students, and understand student evaluation procedures.

The program was financed originally (during the 1978-79 academic year) with federal government funding. Costs currently are met out of university funds.

The Results: More than 40 full-time or part-time young faculty members, with limited teaching experience, have been involved in the program. All indicate some improvement in the quality of their teaching and higher morale. Students feel that instruction has improved.

Contact: Dr. Holly E. Bruno, Dean of Academic Affairs and Associate Professor, University of Maine at Augusta, University Heights, Augusta, ME 04330
Telephone: (207) 622-7131 x231

Maricopa Community Colleges
Phoenix, Arizona

Project Hire Education and Early Retirement Program

The Situation: The governing board of the Maricopa Community College system, comprised of seven institutions in one district, sought to recruit an ethnically and racially balanced pool of faculty members, made up of recently graduated persons who could be instructors in technological areas. Heretofore, colleges in the system tended to hire experienced, highly paid faculty and avoided young, inexperienced people. Of the over 700 full-time tenured faculty members, 500 were 50 years of age or older.

The Idea: In 1981, to achieve its objectives, the system developed a major long-range plan to recruit aggressively the best available young instructors. Named Project Hire Education, the program seeks to add 100 to 150 young teaching professionals to the community colleges in the district over the next five years. The plan calls for the central administrative offices to match salary positions with a campus on a one-to-one basis. (For every additional new young faculty member employed by a college, the district will pay for another faculty position.) In order to open up tenure-track positions for new faculty, the system instituted an early retirement program for older faculty, offering (a) part-time employment for at least ten workdays a year through age 70, (b) major medical and other fringe benefits until age 70, (c) retirement counseling and pre-retirement classes, and (d) enrollment in classes without cost.

The Results: The colleges have filled ten new teaching positions with persons meeting the governing board's criteria: young and enhancing the racial and ethnic balance. Forty-three Maricopa employees have taken early retirement at an annual savings of $275,000. Replacements are younger people who can teach in high demand fields such as computer science and business.

Contact: Dr. Ronald W. Bush, Vice Chancellor for Employee Relations, Maricopa Community Colleges, 3910 E. Washington Street, Phoenix, AZ 85034 Telephone: (602) 244-8355

Mayo Medical School
Rochester, Minnesota

Science Minor Program

The Situation: When making early career choices, the ablest young students at the Mayo Medical School generally did not consider teaching. Most of the students entered the school with the intention of setting up private practices and had little understanding of what an academic career involved.

The Idea: In 1972, the school established a program to provide practical academic experience in the students' third or fourth year of training, based on the assumption that career choices were made during that time. Students select a project from a catalog of clinical research opportunities and work on it from five to twelve months. They are provided with individual laboratories and funds to cover research costs, and work closely with faculty members. The students are required to write up their findings and are encouraged to publish the results. In addition, when endorsed by the faculty advisor, students are provided with travel expenses to present their papers at national scientific meetings.

The Results: Since the program began, approximately 40 young medical students have participated each year. From 1977 to 1980, about 80 students published original papers, 60 of which were presented at national conferences. The 1982 class initiated its own symposium in which papers were discussed. An American Association of Medical Colleges survey revealed that 30 percent of Mayo Medical School students chose clinical science teaching and research as their first career choice, well above the national average. Administrators believe that the opportunity to take part in such academic activities has stimulated student interest in teaching careers at the time in their lives when the impact on their career choice is greatest.

Contact: Dr. James R. McPherson, Associate Dean for Academic Affairs, Mayo Medical School, Rochester, MN 55901
Telephone: (507) 284-2511

Memphis Academy of Arts
Memphis, Tennessee

Proposed Curriculum Enrichment Program

The Situation: Few college-level openings are available for the younger studio teacher and few artists have the academic qualifications for a college-level teaching position. To attract artists with master's degrees, the Memphis Academy of Arts felt it should develop a program specifically designed to provide teaching credentials to artists who could become studio instructors.

The Idea: The proposed program would provide free tuition and studio use to graduate students studying for a master of fine arts degree. The usual course of study in art would be extended one year in order to include courses in teaching skills, and to provide colleague interaction and the opportunity to exhibit in a one-person show. A stipend would be paid the student during the third year of enrollment in the program.

The Results: The program is still in the planning stage.

Contact: Dr. John S. Slorp, President, Memphis Academy of Arts, Overton Park, Memphis, TN 38104
Telephone: (901) 726-4085

Miami University
Oxford, Ohio

Postdoctoral Teaching Awards Program

The Situation: Increasing pressures on new faculty for research achievement and teaching effectiveness, combined with few available tenure positions and competition from the corporate world, hampered Miami University's efforts to recruit and retain younger faculty. The university needed a program to provide young scholars opportunities to improve and enhance teaching skills, conduct research projects, and share ideas with senior faculty.

The Idea: In 1979-80, a postdoctoral teaching fellows program was established for the continuing development of junior faculty. One-year awards to eight to ten young scholars during their first, second, or third year of teaching provide one-third released time for at least one semester and a $150 stipend for a teaching project. The program includes special retreats, a national conference, biweekly seminars, interaction with a senior faculty mentor, and learning activities.

The Results: By May 1982, at the end of the three-year Lilly Endowment funding, 29 fellows and 30 mentors representing every division, all campuses, and 28 departments of the university had participated in the program. Twenty-seven teaching fellows remaining at Miami have received either promotions or tenure. A university-wide teaching network has been established; increased interest has developed in teaching, learning, and unity among colleagues. Beginning in 1982-83, Miami will use university resources to fund this program because of its success in attracting and retaining junior faculty members.

Contact: Dr. Milton B. Cox, Program Director and Associate Professor of Mathematics and Statistics, Miami University, Oxford, OH 45056
Telephone: (513) 529-6723

University of Michigan
Ann Arbor, Michigan

Retention Programs and Workshops for Young Faculty in Learning and Teaching and Junior Engineering Faculty Recruitment

The Situation: The University of Michigan found that newly hired young faculty members had little previous experience and needed assistance in developing teaching skills. In the College of Engineering a 10 percent drop in state support of the university during the last two years plus surging undergraduate engineering enrollments resulted in inadequate funding and heavier teaching loads, as well as deterioration of facilities, equipment, and staff support and a decline in research funds.

The Idea: The university developed two programs to attract and retain young faculty members:

Workshops in Learning and Teaching. In 1978, the university's Center for Research on Learning and Teaching designed and conducted workshops to help young faculty members develop skills in many aspects of teaching, including (a) effective speaking, (b) preparing lectures, (c) leading discussions, and (d) constructing tests.

Junior Engineering Faculty Recruitment and Retention. In 1980, the College of Engineering launched a number of initiatives to recruit and retain junior faculty members, as follows: (a) securing a loan from college discretionary funds and receiving matching support from the university administration (to be paid back in fiscal year 1982-83) to enable the college to raise salaries of assistant and associate professors to levels among the highest in the nation; (b) negotiating with the university a new policy to allow the engineering college to peg its research budget to the amount of funds the college generates each year; (c) offering junior faculty members several years of reduced instructional load, summer funding, new equipment, support staff, and computer time to enable them to work on research projects; (d) encouraging senior faculty to assist new young faculty in career development, particularly in securing external grants; (e) providing junior faculty with opportunities to help determine college policy by including them on departmental committees; and (f) providing funds to bring to the campus outstanding graduate students who can assist younger faculty in research and who may become a pool of potential future faculty members.

The Results: Young faculty members participating in learning and teaching workshops report that the program ▶

University of Michigan
(continued from preceding page)

enhanced their teaching effectiveness and made their teaching more satisfying. The College of Engineering retained all of its tenured younger faculty members during the past year; and nine of the 11 candidates offered new faculty positions have already accepted. With funds from newly negotiated research contracts, the college will be able to assist younger faculty members in their research.

Contact:

Workshops in Learning and Teaching
Dr. W. J. McKeachie, Director, The Center for Research on Learning and Teaching, University of Michigan, Ann Arbor, MI 48109
Telephone: (313) 764-0505

Junior Engineering Faculty Recruitment and Retention Programs
Dr. James J. Duderstadt, Dean, College of Engineering, University of Michigan, Ann Arbor, MI 48109
Telephone: (313) 764-8470

Minneapolis Community College
Minneapolis, Minnesota

College for Working Adults

The Situation: Enrollment at the Minneapolis Community College began stagnating in the mid 1970s. In addition, young tenured faculty became frustrated because of the lack of innovative new programs and opportunities for growth.

The Idea: A College for Working Adults was established in 1980 to attract a new student body of working adults, especially women and minority groups. Courses are given at night and, with the additional enrollment, the faculty have had an opportunity to teach a new curriculum through telecourses, evening courses, and weekend conference seminars; with increased enrollment, the college has been able to employ new young faculty.

The Results: The program began in 1980 with 160 students. Two years later the enrollment had increased to 405 students. Twelve new young faculty members were hired, and new opportunities were provided to three young faculty members already on the payroll.

Contact: Dr. Lawrence P. Litecky, Director, College for Working Adults, Minneapolis Community College, 1501 Hennepin Avenue, Minneapolis, MN 55403
Telephone: (612) 341-7092

University of Minnesota
Minneapolis, Minnesota

Young Faculty Appointments in the Physical Sciences

The Situation: The physical sciences departments at the University of Minnesota were faced with a serious shortage of highly qualified young faculty members who often found greater research opportunities in private industry or at other institutions.

The Idea: In 1980, the university sought and received funding of $625,000 from the Northwest Area Foundation which enabled the physical sciences departments to set up research programs and appoint young faculty members with extraordinary promise. The various departments bid for the right to make appointments, based on need. Appointees are given light teaching loads, research funds, and stipends for their first summer in residence.

The Results: Seven young faculty members were hired in the last two years, four in the Physics Department where the need was greatest. The model for the program has been adopted elsewhere.

Contact: Dr. Warren E. Ibele, Dean, Graduate School, University of Minnesota, 101 Pleasant Street, S.E., Minneapolis, MN 55455
Telephone: (612) 373-2966

Montana College of Mineral Science and Technology
Butte, Montana

Salary Supplements for Engineering Faculty

The Situation: Since 1973, engineering enrollment at Montana Tech has increased 67 percent. The college found it difficult to hire young engineering faculty because of its low salary scale together with a decreasing pool of young engineers with doctoral degrees.

The Idea: Using four approaches to help solve the faculty problem, Montana Tech:

Sought salary adjustments from the Montana Legislature for engineering and computer science faculty members;

Initiated a vigorous campaign to raise funds from private industry to provide endowed chairs, named professorships, and salary supplements for engineering faculty members;

Offered a named professorship together with financial rewards from college alumni now in the corporate world to attract an exceptional candidate; and

Provided released time and financial support to retrain faculty members for teaching positions especially difficult to fill.

The Results: In 1981, Montana Tech's efforts contributed to the decision of the Montana Legislature to raise engineering and computer science faculty salaries. In 1982, every full-time faculty position in mining and petroleum engineering will be supplemented with funds from endowed chairs, named professorships, or salary supplements. Administrators believe that the college is now able to attract and retain high quality young faculty members and are confident that all positions currently vacant will be filled next year.

Contact: Dr. Roy H. Turley, Vice President for Academic Affairs, Montana College of Mineral Science and Technology, Butte, MT 59701
Telephone: (406) 496-4126

Montana State University
Bozeman, Montana

Teaching/Learning Program

The Situation: Montana State is a small, geographically isolated university without a national reputation and with faculty salary levels below national averages. The university was finding it difficult to attract and retain high quality young faculty members.

The Idea: In 1979, the university established a program to improve the quality of faculty instruction, research, and professional development and provided young faculty members with:

Grants for travel to instructional development workshops;

Released time and mini-grants to improve instructional materials and to hire administrative assistants;

Summer quarter grants to carry out research projects;

Summer workshops to introduce young faculty to new and alternative teaching and learning styles; and

Single-day workshops, forums, and fairs to promote new ideas in teaching, grantsmanship, and the use of technology in the classroom. The university's budget supports the program. Workshops and forums are run entirely by faculty volunteers.

The Results: One hundred fifty faculty members have participated in the program. Over $130,000 in instructional development grants have been distributed to 75 faculty members. Administrators say that teaching standards of young faculty members at Montana State have risen substantially and the number of faculty receiving grants has increased since the program began. They also report higher morale among young faculty members and believe that the program has made it possible to attract and retain these persons.

Contact: Dr. Stuart E. Knapp, Vice President for Academic Affairs, Montana State University, 211 Montana Hall, Bozeman, MT 59717
Telephone: (406) 994-4371

University of New Haven
West Haven, Connecticut

Research Incentives: A Three-Pronged Approach

The Situation: The University of New Haven felt that young research-oriented faculty tended to be attracted to large universities with research development opportunities and funding. In an effort to improve the situation, the university committed itself to obtaining research grants, providing released time from teaching for research projects, and creating a more scholarly atmosphere.

The Idea: With money mainly from its operating budget, the university has created a program consisting of three separate but related parts, all coordinated and administered by the graduate dean, as follows:

A competitive "research fund" to provide direct financial support for faculty research activities;

Research/teaching assistantships for graduate students to provide faculty members with help in research and to give the students a fuller, richer graduate education; and

Competitive summer stipends to provide salary support to encourage research-oriented projects by summer faculty in lieu of teaching or other activities.

The Results: The program has provided research support to faculty in the schools of arts and sciences, business, and engineering. In 1980-81, 36 new faculty members either completed publications or made research presentations. Twenty-six of these persons received support under the program. Summer stipends are given mainly to new faculty.

Contact: Dr. Gwendolyn E. Jensen, Dean of the Graduate School, University of New Haven, 300 Orange Avenue, West Haven, CT 06516
Telephone: (203) 934-6321 x269

University of New Mexico
College of Engineering
Albuquerque, New Mexico

Program to Improve Research Opportunities for Young Engineering Faculty

The Situation: The university's College of Engineering found it difficult to attract promising young faculty members to the campus because of inadequate equipment and facilities and insufficient funds for research.

The Idea: In 1977, New Mexico's professional engineering societies and local industries joined forces to persuade the legislature to provide funds for improving engineering education throughout the state.

The Results: The legislature appropriated $5 million to upgrade equipment and facilities at the state's colleges of engineering. Since the program began, the university's College of Engineering has added 24 young faculty members. External research funding has doubled. Officials believe that by providing junior faculty members with state-of-the-art facilities and equipment and with research funds, the college is better able to attract and retain high quality young faculty.

Contact: Dr. Joseph V. Scaletti, Associate Provost for Research, University of New Mexico, Albuquerque, NM 87131
Telephone: (505) 277-5064

University of New Orleans
New Orleans, Louisiana

Incentives to Attract Engineering Faculty

The Situation: During the past five years, the number of engineering students at the University of New Orleans has doubled. Additional qualified faculty have been required to meet the student demand and to improve program quality. In particular, the mechanical engineering program was comparatively small, new, and not well enough established to attract young scholars, and the university felt a well-planned program for recruiting new young faculty was needed.

The Idea: The Mechanical Engineering Department undertook to "sell" the institution and the city of New Orleans to qualified applicants for faculty positions. Emphasis was placed on financial incentives, administration support, available research and consulting opportunities, the location, and salary options. In addition, faculty members were encouraged to conduct research, publish papers in professional journals, and write proposals to qualify for teaching off-campus graduate programs for extra compensation of 10 percent of the academic year salary.

The Results: The university believes that the complete selling package (highlighting all aspects of the institution and the city of New Orleans) has enabled the Mechanical Engineering Department to employ and retain additional new faculty under the age of 35.

Contact: Dr. William S. Janna, Associate Professor and Chairman, Department of Mechanical Engineering, University of New Orleans, Lakefront, New Orleans, LA 70148
Telephone: (504) 286-6652

New York University
New York, New York

Presidential Fellowships for Junior Faculty

The Situation: New York University, with 60 percent of its current faculty tenured and retirements not expected in certain departments until the mid 1990s, has experienced difficulty in attracting talented junior faculty. The university sought ways to recruit promising younger faculty members interested in pursuing important research projects as well as continuing in the teaching profession.

The Idea: In 1980, the university established a pilot program to provide junior faculty members with enough freedom to pursue major research projects. Qualified persons received fellowships to conduct research for one semester, during which they had no teaching responsibilities. The fellowships covered regular salaries and provided a modest stipend for expenses. Advanced doctoral candidates at the university assumed the teaching duties of the faculty involved in research.

The Results: Since 1980, the program has enrolled ten junior faculty members to conduct major research activities in such diverse fields as chemistry, anthropology, and cinema studies. Other faculty members have been able to complete books or articles which will enhance their professional reputations as well as their chances for tenure. The university plans to expand the program to include a greater number of junior faculty members and hopes that young scholars will have a strong incentive to remain in teaching and research careers.

Contact: Dr. Leslie Berlowitz, Assistant Vice President for Academic Affairs, Room 1104, Bobst Library, New York University, 70 Washington Square South, New York, NY 10012
Telephone: (212) 598-2807

Northeast Missouri State University
Kirksville, Missouri

Graduate Study Stipend

The Situation: The university found that while enrollments in nursing and accounting were increasing, the institution was understaffed in these disciplines. There was a growing need for additional, competent faculty with master's degrees.

The Idea: In 1975, the Missouri State Board of Regents established a scholarship program to assist outstanding students in the specific areas of faculty shortage to complete their master's degrees. A stipend — initially $3,000 a semester, later increased to $4,000 — was given each participant with the understanding that for each semester of scholarship, the student would either teach for one year or repay the scholarship.

The Results: Thirteen students have taken advantage of the scholarship program and are qualified to teach nursing or accounting.

Contact: Dr. Darrell W. Krueger, Dean of Instruction, Administration/Humanities 203, Northeast Missouri State University, Kirksville, MO 63501
Telephone: (816) 785-4105

Northeastern University
Boston, Massachusetts

Irish Studies Program

The Situation: In the past five years, Northeastern University experienced a rapid turnover in some departments. Junior faculty members felt isolated from other departments and senior faculty, and had few opportunities to conduct interdisciplinary research. A group of junior and senior faculty members designed a program for faculty from a wide variety of disciplines to work together in course design and research activities.

The Idea: A campus-wide survey ascertained interest in establishing an Irish Studies Committee to develop and run an interdisciplinary Irish Studies Program. Established in 1980, the program provides junior faculty with opportunities to develop new courses and conduct innovative research, with the objective of eventually achieving tenure. New experimental courses, travel grants for both faculty and students, and research support are funded by alumni, the community, and business contributions.

The Results:

Five departments have incorporated Irish studies courses into their programs.

Irish Studies Committee members have presented papers based on collaborative research.

Ties have been established between colleagues in Boston area institutions and in Ireland.

Interuniversity support has been generated by increased budgets and by department-sponsored Irish events.

An interdisciplinary Working Paper Series will be published by the Northeastern Press beginning in fall 1982.

Contact: Dr. Richard Astro, Dean of Arts and Sciences, Northeastern University, 360 Huntington Avenue, Boston, MA 02115
Telephone: (617) 437-3980

University of Northern Iowa
Cedar Falls, Iowa

School of Business Faculty Development Group

The Situation: Soaring enrollments in undergraduate classes in business administration and a severe shortage of business faculty with doctorates have prevented the School of Business at the University of Northern Iowa from achieving accreditation by the American Assembly of Collegiate Schools of Business. An aggressive recruitment program for faculty failed to alleviate the problem.

The Idea: The School of Business turned to its own graduates for a solution. Young people with master's degrees were offered high level faculty apprenticeships designed to interest them in academic careers. Those employed as apprentices teach, do simple research, serve on committees, attend seminars organized by the dean, receive support to visit doctorate-granting institutions, and are offered a special one-year leave at one-half salary to help them complete their doctorates.

The Results: Everyone benefits from the arrangement. The faculty apprentices serve as full-time teachers in business administration courses with large enrollments. They have an opportunity to experience an academic career at first-hand and to complete their study for advanced degrees. Three persons now participating in the program intend to pursue doctorates. Four others have applied for admission to the program. Officials have included a description of the program and results in the application for accreditation which the School of Business hopes will be approved next year.

Contact: Dr. Robert J. Waller, Dean, School of Business, University of Northern Iowa, Cedar Falls, IA 50614
Telephone: (319) 273-6240

Nova University
Ft. Lauderdale, Florida

Faculty MATCH

The Situation: Low salaries and lack of research opportunities have prevented Nova University from attracting faculty members with doctoral degrees in engineering and computer science.

The Idea: The Faculty MATCH program seeks to match potential faculty members with local companies for employment as consultants one day a week. The recently established program will provide faculty members with research opportunities and increased income.

The Results: The program has just begun. Results are not available. However, applicants for potential faculty positions at Nova with whom the plan was discussed have expressed enthusiasm for the idea.

Contact: Dr. Anna Mae Burke, Director, Center for Science and Engineering, Nova University, 3301 College Avenue, Fort Lauderdale, FL 33314
Telephone: (305) 475-7650

Oakwood College
Huntsville, Alabama

Faculty Educational Advancement

The Situation: Oakwood College, a small, private institution, found that it was unable to afford competitive salaries and attract enough faculty with expertise in academic areas.

The Idea: Faculty members without a terminal degree are granted leave to complete their studies. They receive regular salary, reimbursement for tuition, fees, and books, and a per diem allowance. Also, a partial rent subsidy is provided if the faculty member is married and has to be separated from the family.

The Results: Established in the 1960s, the program has attracted, retained, and motivated young faculty seeking a doctoral degree, job security, and better earning power. The additional number of Ph.D.s at Oakwood enabled the institution to gain and keep accreditation.

Contact: Dr. M. A. Warren, Academic Dean, Oakwood College, Oakwood Road, Huntsville, AL 35806
Telephone: (205) 387-1630 x202

Oberlin College
Oberlin, Ohio

Research Appointments for Untenured Faculty Members

The Situation: As a teaching institution that values research, Oberlin tends to appoint faculty members with strong research interests. Teaching loads are heavy, however, and research opportunities are few. The college is seeking to retain research-oriented young faculty members through enhancing their opportunities for productive long-term research.

The Idea: The college will award research fellowships and appointments to junior faculty members in the humanities and social sciences. An Andrew W. Mellon Foundation grant will provide funding for humanities research. A Charles E. Culpeper Foundation grant will be used to make research appointments in the social sciences for postdoctoral fellows who will replace the junior Oberlin faculty members receiving the research leave. Every faculty member will be eligible to compete equally for the awards regardless of rank or length of service.

The Results: The program has just started and the first junior faculty research leaves will occur during the academic year 1982-83. The college hopes that the program will attract and retain young faculty. Records of a similar program that ran between 1962 and 1972 show that faculty chose to remain at Oberlin from four to 16 years after receiving research appointments.

Contact: Dr. Sam C. Carrier, Acting Vice President and Provost, Cox Administration Building, Oberlin College, Oberlin, OH 44074
Telephone: (216) 775-8460

Ohio State University
Columbus, Ohio

University Senate Committee on Women and Minorities and Task Force on Academic Excellence for Women

The Situation: Administrators at Ohio State University found that young faculty, particularly women and minorities, were having increasing difficulty in meeting teaching demands and fulfilling research responsibilities. The university felt it essential to improve the academic environment and encourage professional achievement in order to retain young women and minority faculty members.

The Idea: In 1980, Ohio State established a University Senate Committee on Women and Minorities and a Task Force on Academic Excellence for Women. The committee's purpose is to ensure representation of young women and minority faculty in campus activities, particularly on university governance committees. The task force has initiated a number of activities, including:

The linking of junior women faculty with key university organizations;

Publication of a newsletter providing women faculty members information on academic activities of their colleagues, on campus events of special interest to them, and on activities of the task force;

Presentations by visiting female scholars;

Workshops for young female faculty on topics such as research grant proposal writing, tenure and promotion, combining careers with family responsibilities, and concerns of single women in academia; and

The stimulation of collegial networks among junior and senior women faculty members.

The Results: Program administrators report that both the committee's efforts and the program have been well received. Women are now being appointed to or included in almost every major university committee or task force for determining academic policy. Officials believe that these activities improve the university's ability to attract and retain promising young women and minority faculty members.

Contact:

University Senate Committee on Women and Minorities
Dr. James R. C. Leitzel, Associate Professor, Department of Mathematics, Ohio State University, 231 West 18th Avenue, Columbus, OH 43210
Telephone: (614) 422-8847

Task Force on Academic Excellence for Women
Dr. Erika Bourguignon, Professor, Department of Anthropology, Ohio State University, 124 West 17th Avenue, Columbus, OH 43210
Telephone: (614) 422-1396

Oregon Graduate Center
Beaverton, Oregon

Development for Young Faculty Members

The Situation: The Oregon Graduate Center, a private education and research institute, has been competing for young scientific and engineering faculty members in demand by industry and other institutions. The center does not have a tenure system to help retain young faculty and was concerned about attracting and retaining top quality persons.

The Idea: In 1979, the center established a recruitment and retention program for young faculty members consisting of:

Competitive starting salaries;

Promotion based on comparing a young faculty member's number of publications and amount of research with that of all faculty at the same rank;

Small classes;

More equipment and facilities for research; and

Provision of guidance from and collaboration with older faculty members on research projects.

The Results: Thirty-seven faculty members were involved in the program last year. Administrators believe that the program helps the center attract and retain highly qualified young faculty members.

Contact: Dr. L. E. Murr, Vice President for Academic Affairs and Research, Oregon Graduate Center, 19600 NW Walker Road, Beaverton, OR 97006
Telephone: (503) 645-1121

Oregon State University
Corvallis, Oregon

Project to Improve Teaching

The Situation: Budget cutbacks forced Oregon State to reduce the size of its faculty. Consequently, opportunities for tenure and promotion of young faculty members were fewer and faculty evaluations began to emphasize teaching performance. Many younger faculty members with limited teaching experience felt it would be difficult to obtain tenure because of their inexperience.

The Idea: In 1974, using its own funds, the university established a program designed to improve the quality of teaching at the institution. An orientation program introduced new young faculty members to the instructional facilities on campus. Workshops and seminars offered junior faculty members training in the use of computer instruction and video equipment, in improving classroom discussions and lectures, and in curriculum development and testing. Young faculty members were provided with stipends to attend summer training workshops.

The Results: Each year the university presents 35 workshops and seminars on improving teaching. Over 270 faculty members, about 60 of whom were new, took part in the program in 1981. Administrators say that young faculty participants report that their teaching performances have improved and that this progress has helped them in promotion and tenure review. Eighty-five national and international institutions have asked Oregon State for assistance in developing similar programs. Other colleges and universities have adopted the teaching project on their campuses.

Contact: Dr. Dean N. Osterman, Associate Professor and Director of Instructional and Faculty Development, Oregon State University, Corvallis, OR 97331
Telephone: (503) 754-4335

University of Oregon
Eugene, Oregon

Department of Computer and Information Science Policies for New Young Computer Science Faculty and Part-time Instructorships

The Situation: Efforts to attract and retain young faculty members in Oregon's Department of Computer and Information Science were largely unsuccessful due to (a) low salaries, (b) heavy teaching loads, (c) a lack of research opportunities, and (d) a lack of a Ph.D. degree program.

The Idea: The department established a program to raise the quality of teaching and research, and to recruit and retain young faculty members, as follows:

In 1969, new, stronger policies were adopted, including (a) offering new faculty first choice of new library acquisitions, of what courses they want to teach, of which days of the week and hours of the day they want to teach, and of how they want to arrange their five courses over three terms; (b) ensuring that new faculty have no departmental or advisory duties; (c) providing funds for one conference trip a year and for summer research; and (d) encouraging joint research between junior and senior faculty and assisting new faculty in writing grant proposals.

In 1977, the department began to hire numbers of young, part-time instructors from local industry or government to teach lower-level courses in computer programming.

The Results: Since 1969, the department has had no difficulty in filling vacant faculty positions. Fifteen computer scientists have been employed as part-time instructors and six professionals have applied for positions next year. In addition, the program brings in new expertise to the department, permits more students to be taught, and allows young faculty members to teach challenging, upper-level courses, thus helping to attract and retain them.

Contact: Dr. Stephen T. Hedetniemi, Professor and Head, Department of Computer and Information Science, University of Oregon, Eugene, OR 97403
Telephone: (503) 686-4408

Pacific University
Forest Grove, Oregon

Optometry Teaching Fellows Program

The Situation: Leading graduates of Pacific University's College of Optometry seldom considered academic careers over more lucrative private practices. The shortage of young faculty members became more crucial because of rising enrollments in optometry and the opening of new optometry schools.

The Idea: In 1980, the college established a number of fellowships designed to interest outstanding students in teaching careers. The fellowships involve laboratory work and tutorial instruction for nine to twelve months in exchange for tuition remission and medical insurance. Teaching fellows participate in professional development activities, university service, and college research projects. Although the fellows are considered faculty members, their activities are personally supervised by the dean of the college and senior faculty. The program is supported by university funds.

The Results: In the first two years, five students took part in the teaching fellows program. All have now applied for positions on the college's faculty or have reapplied for teaching fellowships. Administrators believe that the opportunity for practical teaching experience is attracting promising young people and is strengthening their professional qualifications.

Contact: Dr. Willard B. Bleything, Dean, College of Optometry, Pacific University, 2043 College Way, Forest Grove, OR 97116
Telephone: (503) 357-6151 x277

Pennsylvania State University
University Park, Pennsylvania

Program for Interdisciplinary Teaching, College of Earth and Mineral Sciences Faculty Recognition and Development Program, and Development Program for Junior Faculty in the College of Business Administration

The Situation: Penn State has had difficulty in attracting and retaining young faculty members in liberal arts, business administration, and science, particularly earth and mineral sciences.

The Idea: The university and individual colleges attacked the problem in a number of ways:

Program for Interdisciplinary Teaching. With internal funds, the university established a program in which young liberal arts faculty members teach, do research, and participate in activities in departments other than their own. The university encourages these activities by reimbursing the departments for 50 percent of faculty time shared. Departments with growing enrollments "borrow" faculty members from other departments; those with declining enrollments "lend" faculty for interdisciplinary teaching without losing budget funds.

College of Earth and Mineral Sciences Faculty Recognition and Development Program. With support from endowed funds and from corporate donors, the College of Earth and Mineral Sciences (a) established two outstanding teaching awards, (b) provides funds for new faculty members' moving expenses, (c) covers the costs of publishing young faculty members' research findings, (d) finances the purchasing of new equipment, and (e) supports administrative and research assistance.

Development Program for Junior Faculty in the College of Business Administration. With alumni support, the College of Business Administration (a) pays supplements of one-ninth of annual salary to young faculty for two summers of research, (b) has developed mentorships between senior and junior faculty members and has formed association with private industry, (c) conducts workshops on how to attain promotion and tenure, (d) provides funds for professional travel, (e) assists in preparing and publishing manuscripts, and (f) provides executive development education for young faculty members.

The Results: University officials believe that the various programs have not only improved teaching and research among junior faculty members but have also improved the university's ability to hire promising young people.

Pennsylvania State University
(continued from preceding page)

Contact:

Program for Interdisciplinary Teaching
Dr. Stanley F. Paulson, Dean, College of the Liberal Arts, 110 Sparks Building, Pennsylvania State University, University Park, PA 16802
Telephone: (814) 865-7691

College of Earth and Mineral Sciences Faculty Recognition and Development Program
Dr. Charles L. Hosler, Dean, College of Earth and Mineral Sciences, 116 Deike Building, Pennsylvania State University, University Park, PA 16802
Telephone: (814) 865-6546

Development Program for Junior Faculty in the College of Business Administration
Dr. John J. Coyle, Acting Assistant Dean for Undergraduate Programs; or Dr. Kenneth Grahm, Assistant Dean for Continuing Education and Director, Executive Education; or Dr. Paul H. Rigby, Assistant Dean for Research and Director, Center for Research; College of Business Administration, Pennsylvania State University, University Park, PA 16802
Telephone: (814) 865-4700

Pepperdine University
Malibu, California

Faculty/Staff Housing Project

The Situation: High housing costs and interest rates in Malibu in many cases made relocation for promising young faculty members at Pepperdine impossible. Some young faculty members who accepted positions at the university had to seek housing far from campus. University officials believed that this situation put the institution at a disadvantage in recruiting and retaining young faculty members.

The Idea: In 1979, the university's Board of Regents approved the construction of 50 units of condominiums and duplex homes for faculty and staff. The homes were offered at a guaranteed 12 percent rate, much lower than the local market. The board reserved a number of the condominiums to attract new young faculty members, and provided several other faculty members with homes available in June 1982. University funds, with financing and loans from banks, subsidize the $8 million program.

The Results: Pepperdine recently received 12 acceptances of employment from young faculty members who might have sought employment elsewhere had no housing assistance been available. Several other faculty members have been retained by the institution because of the program.

Contact: Dr. Patricia L. Yomantas, Director of Public Information, Pepperdine University, 24255 Pacific Coast Highway, Malibu, CA 90265
Telephone: (213) 456-4138

Princeton University
School of Engineering and Applied Science
Princeton, New Jersey

Efforts to Recruit and Retain Young Engineering Faculty Members

The Situation: Princeton found that despite a strong reputation, it had to recruit aggressively in order to maintain a flow of promising young engineers into the faculty. There was a constant need to upgrade levels of compensation, teaching ability, and research.

The Idea: The School of Engineering and Applied Science proceeded to attract and retain young engineers by:

Raising salaries by approximately 15 percent a year for the past three years;

Maintaining senior faculty ties with Princeton graduates through seminars, conferences, and professional meetings, and encouraging the most qualified persons to return to Princeton as faculty members;

Encouraging the most promising undergraduate engineering students to consider careers in academia and including them in faculty research projects;

Guaranteeing new young faculty members summer research support during their first year, and, in some cases, their second year on campus;

Providing equipment funds, start-up research grants, and travel grants for presenting papers at national conferences;

Offering the possibility of a one-term sabbatical during the second three years on campus; and

Providing mortgage subsidies through a university home loan assistance program for young faculty members seeking housing near the campus.

The Results: In the last five years, all faculty vacancies have been filled. About 90 percent of the entire faculty has been recruited through the engineering faculty's network of contacts.

Contact: Dr. Ahmet Cakmak, Associate Dean, School of Engineering and Applied Science, Princeton University, Princeton, NJ 08544
Telephone: (609) 452-4601

University of Puget Sound
Tacoma, Washington

Early Retirement and Part-Time Employment Program

The Situation: In 1972, the University of Puget Sound established a no-growth enrollment policy which decreased teaching opportunities for new young faculty. With most of the senior faculty members having been employed during the 1960s, the outlook was that, over the next ten years, only a few persons would reach the legal retirement age. The university felt the need to explore creative alternatives to encourage senior faculty members either to retire early or to accept part-time positions, thereby providing opportunities and salary funds for younger faculty.

The Idea: The university established an early retirement program in 1977 which pays a bonus to tenured faculty with long periods of service who retire between the ages of 60 and 65. The bonus amounts to 30 percent of one year's salary if retirement occurs at age 64; 60 percent at age 63; and up to 150 percent at age 60. In July 1982, when the mandatory retirement age under federal law became 70, faculty between the ages of 65 and 70 were offered an opportunity to retire on social security and teach part-time. They could receive annual compensation not to exceed the maximum allowable outside income for persons receiving retirement benefits from the social security system.

The Results: Since the early retirement program began, ten faculty members have retired at least one year early.

Contact: Dr. Thomas A. Davis, Dean of the University, University of Puget Sound, 1500 North Warner, Tacoma, WA 98416
Telephone: (206) 756-3205

Purdue University
School of Mechanical Engineering
West Lafayette, Indiana

Incentives for Young Mechanical Engineering Faculty Members

The Situation: Purdue had little success in attracting persons with doctoral degrees to teach mechanical engineering at the assistant professor level. The pool of engineers with Ph.D. degrees is small, inasmuch as most engineering graduates with bachelor's degrees immediately accept positions with high salaries in private industry.

The Idea: In 1980, the School of Mechanical Engineering established a program to attract high quality young engineers and to encourage its undergraduate students to pursue advanced degrees. The program involves:

Offering young faculty members competitive salaries;

Providing released time and "seed" funding for research;

Guaranteeing summer support for young faculty members;

Conducting seminars and informational discussions between mechanical engineering faculty and students to encourage students to seek advanced degrees;

Providing young faculty members with professional travel support, graduate assistants, and assistance from senior faculty members in obtaining research support; and

Improving laboratories for research.

The school sought and received funding from industries and alumni to finance these efforts.

The Results: In the last two years, three faculty members under the age of 35 have accepted offers from the school; three more have been hired for next year, bringing the total to six. The level of funding designated for new young faculty members has doubled in the past year. Officials say that since the program began, undergraduate mechanical engineering students have expressed greater interest in attending graduate school.

Contact: Dr. W. M. Phillips, Head, School of Mechanical Engineering, 211 Mechanical Engineering Building, Purdue University, West Lafayette, IN 47907
Telephone: (317) 494-5688

Reed College
Portland, Oregon

Junior Sabbatical Program

The Situation: Due to the demands of teaching, new faculty at Reed College, a small undergraduate institution, had little time for research activities and personal professional development. The college needed a program to support scholarly endeavors and to attract and retain young faculty members.

The Idea: Beginning in 1978, non-tenured faculty members receiving a second appointment have been given the opportunity to compete for awards of a one-semester leave with full pay to conduct research.

The Results: Since the program began, seven junior professors have completed research activities; two have published manuscripts. Six of the award recipients have achieved tenure status.

Contact: Dr. G. F. Gwilliam, Vice President and Provost, Reed College, 3203 Southeast Woodstock Boulevard, Portland, OR 97202
Telephone: (503) 771-1112 x258

Regis College
Denver, Colorado

Mid-Career Change Program for Faculty Members

The Situation: The median age of faculty members at Regis College is 45 years. Administrators wanted to maintain an influx of young faculty members as well as a ratio of 65 percent tenured faculty. Officials were concerned that the relatively long period before most faculty members would be eligible for retirement would prevent the college from attracting and retaining young faculty members.

The Idea: In 1980, the college established a program to assist tenured, mid-career faculty members in seeking positions outside academia with the following options:

A faculty member may be relieved of all academic duties at the college, and formally leaves the institution. What would have been the faculty member's next contract year will be considered as fully paid leave time, during which the retiree can study or start a new job.

After agreeing to participate, a faculty member, over a three-year period, receives the difference, if lower, between the salary in a new position and the salary that would have been received at the college.

A faculty member meeting certain requirements is eligible to have salary and teaching obligations gradually reduced over a five-year period upon yielding rights to tenure. Under this plan, the faculty member receives all privileges and benefits of a full-time person.

The Results: Since the program began, two faculty members have changed careers, opening up positions for younger faculty members. Officals believe that the program offers important benefits to the institution in that new young faculty may be hired, and to the senior faculty members wishing to change careers with support and without severing ties with the college. The program involves no cost to the institution as the salaries for replacement of senior faculty members are lower, and offset payments incurred through the program.

Contact: Dr. William J. Hynes, Associate Dean, Regis College, West 50th and Lowell Boulevard, Denver, CO 80221
Telephone: (303) 458-4040

Rensselaer Polytechnic Institute
Troy, New York

School of Engineering Initiatives for Young Faculty and Center for the Study of the Human Dimensions of Science and Technology

The Situation: In 1976, administrators of Rensselaer developed plans to establish the institute as a technological university of first rank. To do this, the institute sought to hire outstanding young faculty members who were also in demand by industry and other institutions. Administrators also wanted to hire a core of young faculty for the recently established Center for the Study of the Human Dimensions of Science and Technology.

The Idea: Engineering Initiatives. The School of Engineering established a Center for Interactive Computer Graphics and a Center for Manufacturing Productivity and Technology Transfer, and offered industries affiliate memberships. With membership funds and industry contributions, the institute offered new young faculty members three-year "packages" of over $82,000 each for (a) academic-year released time, (b) graduate student assistants, (c) equipment, (d) summer salary, (e) hiring and moving expenses, (f) travel support, and (g) secretarial support. Additional funding for equipment increased the total to almost $100,000 per new faculty member.

The Center for the Study of Human Dimensions of Science and Technology. With a Mellon grant, the center offers research support to young new faculty members in applied humanities and social sciences during their first four years on campus. The percentage of research support deceases as the faculty member is able to acquire independent funding.

The Results: The School of Engineering has hired 54 faculty members, 15 of whom were under age 35, since the program began. These efforts have helped bring additional industrial support to the institute. Officials believe that the high levels of research offer great appeal to young engineers and scientists. The School of Humanities and Social Sciences has committed 30 of its faculty members to the activities of the Human Dimensions Center and has employed a number of new young faculty members with applied research interests.

Contact:

Engineering Initiatives
Dr. George S. Ansell, Dean, School of Engineering, 3006 Jonsson Engineering Center, Rensselaer Polytechnic Institute, Troy, NY 12181
Telephone: (518) 270-6203

The Center for the Study of the Human Dimensions of Science and Technology
Dr. Thomas Phelan, Dean, School of Humanities and Social Sciences, Rensselaer Polytechnic Institute, Troy, NY 12181
Telephone: (518) 270-6575

University of Rhode Island
Kingston, Rhode Island

Postdoctoral Teaching Fellows Program

The Situation: New faculty often have difficulty coping with the enormous pressures of teaching and becoming an integral part of a university setting. The University of Rhode Island needed a program to attract and assist young scholars to become effective and confident teachers.

The Idea: In 1978, the university created the Teaching Fellows Program. Young postdoctoral faculty from varying disciplines attend seminars and workshops designed to enhance their learning, teaching, and planning methods. Retreats and social activities allow new faculty to discuss teaching goals, styles, and strategies with specialists and colleagues.

The Results: Ten to twelve faculty members each year receive fellowships funded by the Lilly Foundation. Most participants report increased confidence and effectiveness as teachers. They have become a source of ideas and advice to their departmental colleagues. Faculty from varying disciplines have worked together to develop new teaching ideas.

Contact: Dr. Glenn R. Erickson, Director, Instructional Development Program, 201 Chafee Social Science Center, University of Rhode Island, Kingston, RI 02881
Telephone: (401) 792-2387

Rose-Hulman Institute of Technology
Terre Haute, Indiana

Engineering Graduate Studies Seminar

The Situation: In the past few years, 95 percent of the students graduating from Rose-Hulman with bachelor of science degrees have accepted positions in private industry rather than enrolling in graduate engineering programs. Few students considered academic careers or pursuing advanced degrees which would qualify them for such careers.

The Idea: In 1981, the institute established a program to expose students to recruiters from engineering graduate schools prior to their meeting recruiters from private industry. Representatives from public and private universities were invited to the campus and asked to speak to the students on one aspect of engineering graduate school in general, such as financial aid, or the differences between graduate and undergraduate school. The recruiters then spoke with students individually and, when appropriate, made arrangements to discuss their programs further. Costs of the program were assumed by the institute.

The Results: Ten percent of the graduates from Rose-Hulman last year are now attending graduate school as compared to 5 percent from 1975 to 1981. Officials say that by offering recruiters from graduate schools the opportunity to meet with students before industry representatives visit the campus, and by arranging those meetings in a manner similar to that of industry recruitment, young students are encouraged to consider pursuing advanced degrees, thereby increasing the pool of young potential faculty members with doctorates.

Contact: Dr. James R. Eifert, Vice President for Academic Affairs and Dean of the Faculty, Rose-Hulman Institute of Technology, 5500 Wabash Avenue, Terre Haute, IN 47803
Telephone: (812) 877-1511 x222

Rutgers, The State University of New Jersey
New Brunswick, New Jersey

Minority Teaching and Research Career Development Program

The Situation: The number of minority faculty with doctorates has declined in New Jersey's public higher education institutions, particularly in the physical and life sciences and in engineering. Rutgers is proposing to establish a career development plan to enable Blacks, Hispanics, and disadvantaged groups to obtain Ph.D. degrees and/or conduct professional development and research activities.

The Idea: The program would award minority faculty members with a bachelor's or a master's degree and currently teaching in the state, or recent minority group graduates with bachelor's or master's degrees, a $5,000 grant and forgiveable loan of $10,000 annually to obtain doctorate degrees. Applicants from selected out-of-state minority colleges would also be eligible. Participants obtaining doctoral degrees would be required to teach in New Jersey colleges for at least three years to repay the loan.

The Results: Although the program has not yet been fully funded, the first class of participants started in September 1982.

Contact: Dr. Marvin W. Greenberg, Senior Vice President for Program Development, Budgeting, and Student Services, Rutgers, The State University of New Jersey, New Brunswick, NJ 08903
Telephone: (201) 932-7832

Sacred Heart University
Bridgeport, Connecticut

University Research and Creativity Council

The Situation: Although primarily a teaching institution with few independent research opportunities, Sacred Heart University sought to provide a better environment for scholarly activity and continued professional development.

The Idea: In 1975, the university began to provide research-oriented faculty with in-house funding and released time to pursue and complete scholarly activities. Faculty, both full-time and adjunct, were offered research awards of up to $1,000 and creativity awards of $500 to be used under the supervision of a faculty committee.

The Results: Since 1977, the university has made 40 awards, principally to young faculty members, to enable them to develop and complete research projects and studies. Some of these university-funded activities have won both local and national recognition for achievement and excellence.

Contact: Dr. Charles T. Eby, Director of Faculty Development, Sacred Heart University, P.O. Box 6460, Bridgeport, CT 06606
Telephone: (203) 371-7741

St. Olaf College
Northfield, Minnesota

Faculty Business Internships

The Situation: Young liberal arts faculty at St. Olaf College, having had little experience with private enterprise, felt unable to counsel students adequately about future business careers.

The Idea: In 1980, with an endowment from the Northwest Area Foundation, the college established a program to place faculty members in short-term internships with private companies. Persons from a variety of disciplines have been made available to solve a problem or complete a special project for businesses and industries. A small group of faculty spends a day at, say, a corporate site, receiving an overview of business and management philosophy, and each member of the team interacts on a one-to-one basis with a staff employee. Faculty hired by companies on a short-term basis can use undergraduates as assistants, thus giving them an opportunity to encounter business problems firsthand. In addition, corporation executives are invited to give lectures in classes and to consult with faculty and students on business practices and careers.

The Results: Three faculty members were placed in businesses the first year (1980). Approximately 20 faculty have participated in on-site visits to corporations, and are available for business internships. College officials feel that as a result of these experiences, young faculty have developed greater confidence in and commitment to liberal arts education.

Contact: Dr. Lee M. Swan, Assistant Dean of the College, St. Olaf College, Northfield, MN 55057
Telephone: (507) 663-3006

College of St. Scholastica
Duluth, Minnesota

Program for Comprehensive Faculty Development

The Situation: Because of declining enrollments, St. Scholastica had to reduce the number of young faculty members hired each year. As a result, opportunities for young faculty advancement and professional growth decreased and the institution was in danger of losing its best qualified, most productive, young faculty.

The Idea: In 1976, with its own funds, the college established a program for faculty development which provided young faculty members with:

Opportunities for respecialization and retraining in areas of enrollment growth and in the teaching of adult students;

Support for sabbaticals and research projects;

Opportunities for attending conferences and workshops;

Released time for research and advanced training; and

Seminars on teaching improvement and interdisciplinary education.

The college received assistance for the program from several foundations.

The Results: During the past five years, the program has made more than 230 grants to young faculty members, many of whom have received advanced degrees or have been retrained in related fields. Fifty-four faculty members have been granted released time for advanced study in their fields. Administrators say that the program has provided young faculty members with additional skills and professional opportunities, thus helping to retain them at the college.

Contact: Sister Joan Braun, Dean of the Faculty, College of St. Scholastica, 1200 Kenwood Avenue, Duluth, MN 55811
Telephone: (218) 723-6036

Sarah Lawrence College
Bronxville, New York

The Part-Time Regular Appointment Contract Program

The Situation: Young faculty in the performing and creative arts historically did not remain at Sarah Lawrence College. They were discouraged by unusually heavy teaching responsibilities, lack of time for professional growth and development, no tenure track appointment opportunities, and no part-time contracts (the absence of which prevented the college from keeping gifted young women with children as faculty members).

The Idea: The college developed a program through which both full-time and part-time faculty members in the performing and creative arts receive rights, responsibilities, and benefits equal to those enjoyed by faculty members elsewhere in the college. Included are the possibility of tenure, fringe benefits, eligibility to serve on faculty committees, sabbaticals, and long-term, half-time contracts for some faculty members with high commitment to teaching.

The Results: The program has enabled the college to attract and retain gifted young faculty in the creative and performing arts.

The equal status and academic security offered to faculty in the arts have provided them time to develop as scholars and professionals. Part-time appointments have allowed faculty with home responsibilities some flexibility in their professional activities.

Contact: Dr. Ilja Wachs, Dean of the College, Sarah Lawrence College, Bronxville, NY 10708
Telephone: (914) 337-0700 x303

School for International Training
Brattleboro, Vermont

Program in Intercultural Management

The Situation: The purpose of the School for International Training is to prepare its students for careers in international development. The institution has had to recruit young faculty members with a variety of backgrounds, skills, and language abilities from industry, government, and academia.

The Idea: In 1972, the school established a master's degree program in intercultural management to train students as managers of community programs and field workers in developing countries or regions of the United States. Young faculty members are offered the opportunity to develop innovative approaches to curriculum development and experiential education. The school operates a number of programs abroad, and young faculty members lead groups of students on academic semesters abroad to develop skills as managers of programs in such areas as health services and community development.

The Results: Administrators say that since the program began, the school has received many more applications for faculty positions than it has positions available. They believe that the diversity of experiences which the program offers has helped attract and retain young faculty members.

Contact: Dr. Carolyn Mayo-Brown, Director, Program in Intercultural Management, School for International Training, Kipling Road, Brattleboro, VT 05301
Telephone: (802) 257-7751

Smith College
Northampton, Massachusetts

Early Retirement

The Situation: Smith College foresees only a small percentage of scheduled faculty retirements or resignations in the 1980s. With 48 the average age of tenured faculty and many departments 80 to 100 percent tenured, the college sought the best way to create an environment with fresh ideas attractive to young motivated personnel.

The Idea: An early retirement program allows full-time faculty members with at least 15 years' employment to retire two to eight years early with a minimal loss of compensation and benefits. The program is designed mainly to encourage retirement at age 60 or shortly thereafter.

Early retirement in the Humanities Department is funded through a Mellon Foundation grant which also provides five-year fellowships to young faculty members awaiting department openings. Retirements from other departments are financed from college funds.

The Results: Four faculty members have accepted early retirement and four persons are in the process of doing so. These early retirements will create new openings and enable the college to recruit talented young persons.

Contact: Dr. Kenneth H. McCartney, Dean of the Faculty, Smith College, Elm Street, Northampton, MA 01063
Telephone: (413) 584-2700 x424

South Dakota School of Mines and Technology
Rapid City, South Dakota

Individualized Development of Young Faculty Members

The Situation: The South Dakota School of Mines and Technology competes with private industry and other institutions for high quality junior personnel. The school felt that strong measures were needed to bring young faculty members to the campus and to ensure their ongoing professional development.

The Idea: Using institutional funds, the school took steps to attract and retain young faculty members on an individual basis, by:

Offering diverse and challenging courses to teach and encouraging the introduction of experimental courses;

Encouraging the development of national reputations through active participation in professional associations;

Providing research funding and senior faculty mentorship so that young members may establish their own projects and publish findings;

Providing summer research opportunities and temporary positions in private industry; and

Fostering a network of communication through social and professional contact between new faculty and all levels of the academic community.

The Results: Officials believe that these efforts succeed in making new young faculty members feel welcome at the institution and in quickly involving them in campus activities. Administrators feel also that young faculty members are attracted to the school and choose to remain there because of the wide spectrum of professional opportunities offered.

Contact: Dr. Gordon L. Scofield, Distinguished Professor of Mechanical Engineering and Assistant to the Vice President for Academic Affairs, South Dakota School of Mines and Technology, Rapid City, SD 57701
Telephone: (605) 394-2256

University of Southern California
Los Angeles, California

Housing Assistance Program

The Situation: Efforts of the University of Southern California to attract and retain young faculty were hampered by rising interest rates and high real estate prices in southern California. A university home loan program started in 1979 and revised in 1981 did not solve the problem.

The Idea: In 1982, USC established a shared appreciation loan program, designed to make it easier for eligible young faculty and staff to obtain financing and to meet monthly payments on a single-family residence. The university provides the participant with up to 90 percent of the property's value on primary and secondary financing. To help assume the costs of the secondary financing, the university shares in the appreciation of the property. The participant has full responsibility for the maintenance of the property, and has full benefit of the interest and tax deductions.

The Results: In April 1982, the university's board of trustees authorized the use of $1 million in endowed funds as "start-up" capital for the housing assistance program. Results are not yet available, but administrators believe that the institution will be able to attract and retain young faculty who would otherwise be lost to the university because of high housing costs.

Contact: Dr. C. J. Pings, Senior Vice President, Academic Affairs, or Dr. J. C. Strauss, Senior Vice President, Administration, University of Southern California, University Park, Los Angeles, CA 90007
Telephone: (213) 743-2311

University of Southern Mississippi
Hattiesburg, Mississippi

Faculty and Administrative Development Program

The Situation: Without competitive faculty salaries in several fields and without a national reputation, Southern Mississippi has had difficulty in recruiting and retaining promising young faculty members.

The Idea: In 1980, the university designed a program to integrate new young faculty members and to provide for their ongoing professional development through:

Workshops conducted by teams of trained faculty members on such topics as orientation to the university, management, small group communication and teaching techniques, and interpersonal communication;

Services and/or equipment to produce instructional graphics (graphs, charts, slides, etc.);

Videotape recording of classes, seminars, and special events;

Assistance in instructional design and refinement; and

Special resources to enhance teaching, such as film, language and speech laboratory, and teleconferencing.

The program is supported by university funds.

The Results: Officials believe that the program has benefited young faculty members by effectively integrating them into university life and by assisting in their development as teachers and researchers. Officials say that by using faculty members from a variety of disciplines as workshop trainers for young faculty members, the program helps to involve the entire university in developing and retaining promising young persons.

Contact: Dr. Hugh Frugé, Acting Director, Teaching Learning Resource Center, University of Southern Mississippi, Southern Station Box 5082, Hattiesburg, MS 39406
Telephone: (601) 266-5002

Southwestern Baptist Theological Seminary
Fort Worth, Texas

Salary Scale Adjustments for Young Faculty Members

The Situation: The seminary had difficulty in attracting and retaining young faculty members because its starting salaries were not competitive with other institutions. The problem was how to raise salaries without upsetting balances between junior and senior faculty members.

The Idea: In 1979, the seminary instituted a program offering young faculty members substantial promotions during the first few years of their careers, when their financial needs are usually the greatest. Patterned after industrial pay scales, the program involves increasing salaries of faculty early in their careers at a pace more rapid than in later years. Faculty members at each salary level (instructor, assistant professor, associate professor, or professor) also receive higher step increases earlier. In this way, the institution is able to offer higher salaries to new young faculty members at any rank. All faculty members have received pay raises as a result of increased earnings from endowments and from denominational allocations.

The Results: All faculty members have benefited from the program, despite the fact that pay scales have been adjusted to benefit new young faculty members the most. Officials believe that the program has helped the institution to attract young faculty members and to retain them at Southwestern Baptist Theological Seminary.

Contact: Dr. Lloyd Elder, Executive Vice President, Southwestern Baptist Theological Seminary, P.O. Box 22000, Fort Worth, TX 76122
Telephone: (817) 923-1921 x395

Stanford University
Stanford, California

Center for Teaching and Learning, Faculty Research Fellowships, Faculty Early Retirement Program, and Second Mortgage Coinvestment Program

The Situation: Stanford University found that graduate students deciding on careers often did not know what academia had to offer them or believed that the academic job market was too tight to enter. The university needed a way to encourage talented young people to consider the teaching profession as well as a way to help young untenured faculty members in the humanities to obtain support for research needed in anticipation of tenure review. Stanford also found that because of a high level of faculty hiring during the 1960s and because of the new federal law changing mandatory retirement from age 65 to 70, by 1985, only 23 percent of its faculty would be under the age of 40. Also contributing to the university's inability to hire new young faculty members were the extremely high housing costs in the areas surrounding Stanford, together with spiraling inflation rates.

The Idea: To reduce the problem of obtaining the best of the young faculty candidates, Stanford launched several programs:

The Center for Teaching and Learning on campus encourages young graduate students with superior teaching ability to enter academia by (a) offering seminars on preparing for the academic job market; (b) selecting, training, and supporting outstanding teaching assistants as consultants for other teaching assistants; and (c) providing women and minority students with peer support to assist them in handling their special employment problems.

Faculty Research Fellowships. A combination of university and privately-donated funds has been made available for fellowships for young untenured faculty in the Humanities Division. Fellowship recipients are provided with office space and secretarial assistance while they conduct their research at the Stanford Humanities Center.

The Faculty Early Retirement Program. An innovative program offers an early retirement option for faculty reaching age 62 with at least 15 years' employment at the university. The retirement payment is based on the median salary for each faculty rank at the institution. Although open to all eligible faculty, the program is more attractive to those persons whose salaries are below the median for their rank.

Second Mortgage Coinvestment Program. With $21 million in funds from its ▶

Stanford University
(continued from preceding page)

endowment investments, Stanford offers new young faculty members low down payments and reduced rates on mortgages for homes on the Stanford campus or within a 15-mile radius of the university. The mortgages mature two years after the borrowers leave the faculty or when the house is unoccupied. At maturity, the university receives a share of the value of the house's appreciation from the inception of the mortgage. This amount is then reinvested in new mortgages for young faculty members.

The Results: Stanford has increased the number of new young faculty hired each year, and administrators believe that the university's efforts have helped to improve the vitality of the faculty. Nine faculty members received faculty research fellowships this year and 12 additional fellowships will be offered next year. It is expected that the fellows' achievements will improve their chances for tenure. Forty-three graduate students have participated in the teaching consultant program; 90 percent have gone on to academic careers.

Since 1977, 35 faculty members have retired early, opening at least that many new positions. As of March 1982, 104 faculty members had participated in the housing program.

Contact:

Center for Teaching and Learning
Dr. Michele Fisher, Director, Center for Teaching and Learning, P.O. Box H, Stanford University, Stanford, CA 94305
Telephone: (415) 497-1326

Faculty Research Fellowships
Dr. Ian P. Watt, Director, Stanford Humanities Center, Building 300, Stanford University, Stanford, CA 94305
Telephone: (415) 497-3052

Faculty Early Retirement Program
Dr. Frederick Biedenweg, Decision Analyst, Office of Management and Budget, Building 310, Stanford University, Stanford, CA 94305
Telephone: (415) 497-4567

Second Mortgage Coinvestment Program
Dr. Robin B. Hamill, Director of Housing Programs, 105 Encina Hall, Stanford University, Stanford, CA 94305
Telephone: (415) 497-1964

State University of New York at Stony Brook
Department of Computer Science
Stony Brook, New York

Incentives to Attract and Retain Young Computer Science Faculty

The Situation: Efforts to attract and retain young computer science faculty members at Stony Brook were hindered by inadequate computer facilities and equipment, heavy teaching loads, few research opportunities, and low salaries.

The Idea: In 1977, the Department of Computer Science and the central university administration launched a campaign to raise funds from federal and state governments, as well as from foundations and industry, and to emphasize computer science research in the department. With funds raised, the department was able to (a) increase salaries of young faculty members; (b) relocate to newer, more modern and spacious offices; (c) provide research grants and additional office space for graduate students; (d) obtain state-of-the-art laboratory equipment; and (e) pay travel expenses to prospective faculty members for visits to the campus.

The Results: Officials report that the program has been an important factor in retaining promising young computer science faculty members, as well as in enabling the department to hire additional young faculty for next year. By attracting new young faculty members and by improving equipment and facilities, the department has upgraded its educational program and has brought in additional research revenue.

Contact: Dr. Jack Heller, Professor and Chairman, Department of Computer Science, State University of New York at Stony Brook, Stony Brook, NY 11794
Telephone: (516) 246-7090

Stephens College
Columbia, Missouri

Center for Conceptual Studies

The Situation: Stephens College sought a way to develop a strong interdisciplinary interest among new young faculty members, most of whom had an advanced degree in a single discipline. A program was needed to encourage all faculty to engage in interdisciplinary study.

The Idea: In 1981, the college established a Center for Conceptual Studies designed to encourage professional development of faculty through a program of interdisciplinary study. Each year up to five young faculty members are selected to be fellows in the center. They study together and teach two or more courses based on a proposed interdisciplinary topic. Each person is released half-time from departmental duties for the year-long period of participation. The center provides a "sabbatical in residence" to all faculty members at Stephens with emphasis on their becoming more involved with other faculty rather than on developing more individual, specialized knowledge.

The Results: Three faculty teams representing nine departments have completed a year in the program. Both outside and self-evaluations indicate strong, positive results. Faculty have gained knowledge through their study of the concept and by being students in the disciplines of other team members. Students found the courses challenging and the presence of faculty in a learning role a new experience.

Contact: Dr. Eugene Schmidtlein, Vice President and Dean of the Faculty, Stephens College, Box 2005, Columbia, MO 65215
Telephone: (314) 442-2211 x303

Trinity College
Humanities Department
Burlington, Vermont

Program for Interdisciplinary Studies

The Situation: In the 1970s, the Humanities Department of Trinity College was faced with a serious decline in student enrollment. Young faculty members had little opportunity for professional growth and the department foresaw few possibilities for hiring young people inasmuch as cutbacks in personnel were probable.

The Idea: In 1979, the department was reorganized to consolidate various disciplines into a single interdisciplinary program: U.S./Canadian Comparative Cultures; courses in this program were integrated into Trinity's Weekend College. The combination of these two efforts permitted greater flexibility in developing a system of extended contracts with young faculty members rather than fixed tenure. Grants from the National Endowment for the Humanities provided support for the program.

The Results: As a result of the reorganization of the department and introduction of a new curriculum, the Humanities Department was able to retain all of its younger faculty and also has employed additional young faculty members. Officials say that the Interdisciplinary Studies Program has also expanded professional development opportunities.

Contact: Dr. Oren W. Davis, Associate Professor and Chairperson of Humanities Department, Trinity College, Colchester Avenue, Burlington, VT 05401
Telephone: (802) 658-0337

University of Utah
Salt Lake City, Utah

College of Mines and Mineral Industries and College of Engineering Program

The Situation: The University of Utah, faced with competition from the industrial sector, located in a predominantly non-industrial area 500 miles from a comparable university, and part of a state system without a mandatory retirement age for tenured faculty, has had difficulty attracting young Ph.D.s for faculty positions in engineering and applied sciences. Meanwhile, enrollment in the engineering disciplines has increased rapidly.

The Idea: The College of Mines and Mineral Industries and the College of Engineering hire young technical professionals on nine-month contracts with a guarantee of full-time academic employment for the first two summers. New young assistant professors are offered higher salaries and are informed of precisely what is expected from them for merit recognition and tenure. Funds are made available for additional equipment and research activities; and a special travel fund gives young faculty an opportunity to attend meetings, visit distant schools or laboratories, and seek research grants. Consulting arrangements are being set up to increase interaction between faculty and local industry. Special plans have been instituted for partial or total retirement for older faculty. Loans are made available to undergraduate and graduate engineering students, forgiveable after two years of teaching.

The Results: Sixteen assistant professors have been hired by the two colleges during the past three years. They have worked directly with chairpersons and the dean on special problems concerning young faculty. The colleges have already employed three junior faculty members for next year and other prospective members are seriously considering university offers of employment.

Contact: Dr. Laurence H. Lattman, Dean, College of Engineering and Dean, College of Mines and Mineral Industries, 209 WBB, University of Utah, Salt Lake City, UT 84112 Telephone: (801) 581-8767

University of Vermont
Burlington, Vermont

Multi-Faceted Approach to Recruiting and Retaining Young Faculty Members

The Situation: The university has had difficulty in attracting and retaining young faculty members, particularly in disciplines such as computer science, business administration, and engineering, due to low faculty salaries and competition for personnel from private industry.

The Idea: Since 1980, administrators have established a variety of programs to attract and retain young faculty members, such as:

Creating groups of faculty members from disciplines such as genetics, medicine, and management as independent corporate entities for outside consulting. Young faculty members from these departments form "Associates" groups, in which they perform research and serve as paid consultants to external agencies and industries.

Maintaining through long-range budget planning a stable academic environment by the retention of most young faculty members in a period of funding cutbacks.

Establishing "start-up" funds through institutional budgets for research by young faculty, and a competitive institutional awards program for faculty in teaching, advising, and scholarly research.

The Results: Three hundred twenty-five faculty members, about 33 percent of whom are under the age of 35, have participated in the Associates program, and officials report that these activities have supplemented faculty salaries while helping to boost morale. $150,000 was made available to department deans last year as "start-up" research support for young faculty members; $325,000 was disbursed through the institutional awards program for excellence in teaching, advising, and scholarly research.

Contact: Dr. Robert G. Arns, Vice President for Academic Affairs, Waterman Building, University of Vermont, Burlington, VT 05405
Telephone: (802) 656-4400

Virginia Commonwealth University
Richmond, Virginia

Program to Improve Faculty Teaching Effectiveness

The Situation: Twenty percent of Virginia Commonwealth University's students are black and nearly all the faculty is white. Young faculty members, most of whom are recent graduates of predominantly white institutions, have difficulty in adjusting to integrated classes and frequently seek positions elsewhere.

The Idea: In 1977, the university's Center for Improving Teaching Effectiveness set up a program to help young faculty members adjust to the biracial student body. With institutional and federal funds, the center helps young faculty members examine their assumptions and practices in teaching black students. The center has organized a series of meetings between young faculty members and teaching counselors, arranged discussions between white faculty members and black students, analyzed classroom teaching techniques, and conducted in-depth interviews on assumptions about black students.

The Results: Four hundred faculty members have participated in the program. Administrators report improved teaching effectiveness and a greater level of confidence among young faculty.

Contact: Dr. John F. Noonan, Director, Center for Improving Teaching Effectiveness, Virginia Commonwealth University, 310 North Shafer Street, Richmond, VA 23284
Telephone: (804) 257-1121

Wabash College
Crawfordsville, Indiana

Providing Opportunities for Junior Faculty Members

The Situation: Wabash, a small, undergraduate liberal arts college, felt it was not attracting highly qualified young scholars as faculty members because faculty salaries were too low and research funding was inadequate.

The Idea: To improve its attractiveness to young scholar-teachers, the college:

Offers two-year assistant professorships (the Trippet Rotating Assistant Professorship program) to selected young faculty members. Financed with an endowment from a college fund-raising activity, the program provides appointments at salaries competitive with larger colleges and universities and stipends that enable recipients to develop research programs, publish scholarly papers, and attend professional meetings.

Awards research scholarships that will allow young faculty members to conduct research for one semester without teaching.

Uses an extraordinarily large proportion of faculty development funds to support the activities of young faculty members under the age of 35.

The Results: The first research scholarship was awarded in January 1982 and the first Trippet appointment will be in the fall of 1982. Faculty under 35 are already receiving more than half of the faculty development funds.

Contact: Dr. Nancy J. Doemel, Development Office, Wabash College, P.O. Box 352, Crawfordsville, IN 47933
Telephone: (317) 362-1400 x282

Washington University
St. Louis, Missouri

University-Wide Efforts to Attract and Retain Younger Faculty Members

The Situation: Washington University has been concerned about developing strategies to enhance its ability to attract and retain young faculty.

The Idea: The university has taken the following initiatives:

In 1981, the engineering program obtained a foundation grant enabling its departments to (a) provide and supplement appointments for junior untenured faculty members; and (b) support a three-year graduate fellowship in engineering education, including tuition, fees, and stipend.

In 1981, departments in the humanities obtained a Mellon Foundation grant of $750,000 to (a) hire young faculty members in anticipation of future retirements of older faculty; and (b) open positions for junior faculty members by helping to fund early retirements of older faculty.

Flexible recruitment policies permit department chairpersons to (a) adjust individual teaching loads and appointment terms for new young faculty; (b) grant leave for the first semester of teaching so that young faculty can complete ongoing research; and (c) provide summer research support during the first two years of employment.

An early retirement incentive plan makes retirement at age 62 financially attractive.

The Results: Administrators believe that all of these efforts have improved the institution's ability to attract and retain young faculty members. The entire program has allowed Washington University to reallocate resources and respond to changing academic needs.

Contact: Dr. James W. Davis, Vice Chancellor and Associate Provost, Washington University, St. Louis, MO 63130
Telephone: (314) 889-5100

University of Washington
College of Engineering
Seattle, Washington

Incentives to Attract and Retain Young Engineering Faculty Members

The Situation: Located in a metropolitan area with a concentration of leading high technology industries competing for young personnel, the university's College of Engineering had difficulty in hiring qualified young faculty members in chemical and electrical engineering.

The Idea: The college attacked the problem of recruiting and retaining young faculty members in engineering by:

Assuring new young faculty members of summer salaries, start-up research grants, priority on equipment, and graduate research assistants; and

Developing a program in which faculty members establish close affiliations with local high technology industry companies, and work with them as consultants and researchers.

The Results: Last year the college was able to fill all vacancies in the chemical and electrical engineering departments. As a result of industrial affiliations, the college has increased funding substantially for research and equipment.

Contact: Dr. J. Ray Bowen, Dean, College of Engineering, University of Washington, Seattle, WA 98195
Telephone: (206) 543-0340

Wayne State University
Detroit, Michigan

Career Development Chairs for Young Faculty Members

The Situation: The university wanted to attract and retain promising young faculty members at the institution, as well as to recognize their outstanding achievements.

The idea: In 1982, the Wayne State Fund established career development chairs for younger faculty members who had no more than four years of tenure. The fund provides about $27,000 for each of three young faculty members chosen each year to begin or complete a research project. The recipients receive "start-up" funds, in addition to a full year of released time and some research funds.

The departments involved are reimbursed for 50 percent of the faculty members' salaries and are expected to sponsor special seminars or presentations on the work of the chairholders. Persons holding the chairs are also required to submit a final report on their activities to the Wayne State Fund.

The Results: In the program's first year three career development chairs were awarded to young faculty members from different departments of the university. Officials believe that by recognizing and rewarding outstanding achievements of young faculty members, the university helps to attract and retain them.

Contact: Dr. Michael F. Luck, Senior Vice President for Development and Public Affairs, Wayne State University, Detroit, MI 48202
Telephone: (313) 577-5161

Webster College
St. Louis, Missouri

Development Leave Option for Young Faculty Members

The Situation: Webster College restricted tenure to one-third of the total number of its faculty members. Because of this policy, the college had difficulty in attracting promising young faculty members who were concerned about their future with the institution.

The Idea: In 1972, the college established a program in which a young untenured faculty member in the third year of employment could waive the opportunity for tenure and take a leave of absence in the fourth year. The college provides one-half salary for a year's leave or full salary for one semester. Young faculty members can pursue advanced degrees, continue research, or develop professional interests outside the college. Although program participants waive their right to tenure, the college, in certain cases, has the option to grant them tenure. Webster fully funded the program until 1980, when the National Endowment for the Humanities provided partial support.

The Results: Of the current 74 full-time faculty members, 32 have been granted faculty development leaves. Two-thirds of the 32 members — 22 — are now tenured. Since the program began, Webster has never had to terminate a faculty member because of the tenure restriction. The number of young faculty members has increased slightly in the last five years. College administrators believe that the program has improved faculty morale and has allowed the institution to retain promising young faculty members.

Contact: Dr. Charles F. Madden, Dean of the Undergraduate College, Webster College, 470 East Lockwood, St. Louis, MO 63119
Telephone: (314) 968-6915

University of West Florida
Pensacola, Florida

Program to Provide Maximum Opportunities for Faculty Development

The Situation: Young faculty members with growing reputations at the University of West Florida often sought positions in well-known institutions or private industry, rather than remaining at the university—a regional institution lacking a major reputation.

The Idea: In 1972, the university established a program to provide young faculty with:

Competitive salaries, including opportunities for summer and overtime teaching to augment compensation;

Modest teaching loads and released time from academic duties;

Comprehensive teaching and research support, including extensive library services, assistance in gaining external funding, secretarial and editorial assistance, and teaching materials;

Numerous awards and prizes to stimulate research and creative projects;

Active sabbatical and overseas exchange programs for which the university assumes salary, travel costs, and maintenance allowances up to one year;

Leave policies and financial assistance enabling the completion of requirements for advanced degrees; and

Personal attention by upper-level administrators.

The Results: Since 1977, the university has reduced its overall faculty attrition rate to less than 5 percent a year. The number of faculty members under 35 years of age hired in the last five years has increased steadily. Officials say that their efforts have allowed the retention of promising younger faculty members.

Contact: Dr. Arthur H. Doerr, Vice President for Academic Affairs, University of West Florida, Pensacola, FL 32504
Telephone: (904) 476-9500 x2220

Western Carolina University
Cullowhee, North Carolina

Program to Retrain Young Faculty Members

The Situation: Declining student enrollment in traditional areas of study, and the relative scarcity of applicants with doctoral degrees in new growth areas such as business and computer science, have limited Western Carolina University's recruitment of young faculty members. Because the university could not compete with business and other universities for young personnel with doctoral degrees, it sought to improve the credentials of its own faculty committed to pursuing advanced study, particularly in the new growth fields.

The Idea: In 1981, the university offered selected young faculty members released time at full pay to enable them to study for advanced degrees in areas such as computer science. The university employed persons retired from business and academia as emeritus professors to replace the young faculty members on one-year study leaves. Funding was partly from federal funds.

The Results: Five young faculty members have participated in the program which the university believes helps retain young faculty.

Contact: Dr. Martha McKinney, Special Assistant, Office for Academic Affairs, Western Carolina University, Cullowhee, NC 28723
Telephone: (704) 227-7495

University of Wisconsin-Madison
Madison, Wisconsin

Research Grant Program for Young Untenured Faculty Members

The Situation: Many untenured faculty members at the University of Wisconsin-Madison, especially minorities and women, have been asked to devote an unusual amount of time to university service in order to ensure that the minorities and women are represented adequately on major university committees. Their activities promote the university's desire that a broad range of views be represented on the committees; and that there be increased involvement of untenured faculty in university governance. The consequence for the persons involved, however, is that they have less time than their colleagues to conduct the research needed to meet tenure requirements—an arrangement both unfair and contrary to the university's desire to attract and retain talented young faculty, particularly women and members of minorities.

The Idea: In 1979, with funds from the graduate school, the university established a research-service grant program providing summer research opportunities for assistant professors and instructors who have given significant time and effort to university service beyond their department or academic discipline. Applicants for grants are judged both on (a) the nature and extent of the faculty member's university service and (b) the quality of the research proposal.

The Results: Although the program is a small one, university officials believe that a number of young women and minority faculty have been able to catch up on their research during the summer and to make adequate progress toward tenure.

Contact: Dr. MaryAnn Yodelis Smith, Associate Vice Chancellor-Academic Affairs, 166 Bascom Hall, University of Wisconsin-Madison, 500 Lincoln Drive, Madison, WI 53706
Telephone: (608) 263-6561

Wittenberg University
Springfield, Ohio

Faculty Development Organization and Commission on the Status of the Faculty

The Situation: Wittenberg expects only a small percentage of faculty retirements in the 1980s. Many of its departments are 75 to 80 percent tenured and 70 percent of the faculty is under age 50. The university felt ways were needed for young faculty to pursue professional careers while continuing to meet teaching expectations and demands.

The Idea: The university introduced two programs:

In 1975, the **Faculty Development Organization** was established to develop a professional growth program to meet junior faculty needs and interests. This program aims to (a) improve the teaching of all faculty members, (b) strengthen young faculty's competence and confidence through professional enrichment and development grants, and (c) retrain or redirect faculty in competencies other than their own specialties.

In 1979, a **Commission on the Status of the Faculty** was appointed to confront the problems hampering faculty development. Major emphasis was placed on professional growth and development and retirement opportunities.

The Results: The Faculty Development Organization has helped young faculty members to prepare and revise courses, present papers at professional meetings, and take courses to strengthen their areas of expertise. In 1981, the Commission on the Status of the Faculty recommended a wide range of faculty development programs, including travel support, grants to outstanding students to assist young faculty in research projects, summer stipends, and encouragement for outside vocational experiences.

Contact: Dr. William M. Wiebenga, Provost, or Dr. Jerry L. Hamilton, Administrator, Faculty Development Organization, Wittenberg University, P.O. Box 720, Springfield, OH 45501
Telephone: (513) 327-7614

Yale University
New Haven, Connecticut

Programs for Young Faculty Members in the Arts and Sciences

The Situation: Declining student enrollment has caused certain departments at Yale to limit the number of young faculty members receiving tenure. Only 7 percent of the faculty members in the humanities appointed between 1965 and 1969 have received tenure. Because of this situation, the university was concerned that it would lose promising young faculty members; or that outstanding young scholars in the humanities would abandon plans to pursue academic careers.

The Idea: In the last several years, Yale has established a wide range of programs, funded by private endowments, designed to attract and retain young faculty members:

Young graduate students are offered a financial aid "package" including a stipend spread out over four years in return for the equivalent of two years of part-time teaching. These students are also eligible to receive departmental awards that recognize outstanding teaching.

Young faculty members may also receive teaching prizes, research grants, small grants, and released time support to travel, conduct research, and present papers at national meetings, all of which are intended to improve credentials for tenure review.

The period before young faculty members are reviewed for tenure has been extended to a maximum of ten years, permitting additional time for junior faculty to prepare professional credentials.

Older tenured faculty members are eligible to take part in a partial retirement program in which they teach one-third time, thereby opening tenure slots for younger faculty.

In anticipation of future retirements, departments may appoint junior faculty members as replacements until those retirements occur (normally in two to three years after the appointment).

Younger faculty members who do not anticipate being granted tenure may receive support to respecialize in areas of greater demand. (For example, young faculty specializing in teaching literature may take courses and obtain experience in teaching expository writing.)

The Results: Since the program's inception in 1972, approximately 300 small grants have been disbursed to young faculty members. Twenty-four released time grants are offered each year and 10 graduate students are awarded teaching prizes. Twelve older faculty members have participated in the partial retirement program, opening up tenured positions for young faculty members. Officials believe that these programs have helped the institution to attract and retain young faculty members.

Contact: Dr. Charles Long, Associate Dean, Yale College, New Haven, CT 06520
Telephone: (203) 436-0109

The Employment Outlook for Young Faculty Members

Appendix

The recent literature in higher education includes a substantial number of books, reports, and articles containing projections of the trend in the number of students enrolled in colleges and universities. The data cover five-, ten-, or even 20-year periods and are broken down by age groups, sex distribution, type of institution, state, degree sought, and career concentrations. The projections are then used on occasion as the basis for making projections on the number of faculty members that colleges and universities will need during the next few years. These data are also broken down by age, sex, state, etc.

All projections on the need for new faculty members come to the same conclusion: that is, there will be a continuous decline in the need for faculty members in the liberal arts and sciences until 1987 or thereabouts; and this decline will be greater with respect to the need for new young persons entering faculty teaching than it will be for older persons already in faculty positions and protected to some considerable extent by tenure commitments. Some exceptions to the general trend can be expected in a small number of fields such as engineering, business, computer science, and possibly a few health specialties.

The existing projections and analyses of the employment outlook for faculty are a good backdrop for the Academy's study of the activities that colleges and universities are undertaking to attract and retain young faculty members. This appendix provides a brief summary of the outlook taken from a recent University of Chicago report[1] that included three informative charts, one from a report by the Carnegie Foundation for the Advancement of Teaching and

[1] *"Report of the Commission on Graduate Study at the University of Chicago,"* University of Chicago Record, *XIV, Number 2, May 3, 1982, p. 78-79.*

two from a report by the president of Princeton University. The key paragraphs on the need for new faculty[2] follow.

Shrinking college enrollments are expected to mean a decline in the demand for faculty and a consequent reduction in the job opportunities for which the Ph.D. has traditionally been the preparation. The implications of these calculations for graduate education leading to the Ph.D. therefore seem grave enough. But the consequences of declining enrollments are likely to be exacerbated by the age distribution among current faculty members and by the recent legislation extending the age of mandatory retirement to age seventy. Because of the rapid expansion in higher education in the 1960s and 1970s, a large proportion of faculty members are still relatively young. In 1978, 73 percent of all faculty members were under fifty and 60 percent under forty-five; only 16 percent were fifty-five or over and only 7 percent were sixty or older. As a result of this age distribution, there will be relatively few faculty retirements in the next two decades . . .

Low rates of retirement and a decline in enrollments therefore seem likely to combine in the next two decades to depress the academic job market for new Ph.D.s. Efforts to calculate this effect are extremely complex and involve a wide range of assumptions. The most recent projections — an effort by William Bowen and associates at Princeton to update the earlier calculations of Alan Cartter — reach an estimate that a total of 100,000 academic positions will become available in the period from 1980 to 1995. This figure would mean that the total demand for faculty during the fifteen year period would be roughly equal to that during the three peak years, 1965-67.

On the supply side, 31,200 doctorates were awarded by United States universities in 1979, as compared with 16,341 in 1965, 17,949 in 1966, and 20,406 in 1967. Although the number of doctorates granted has declined from the peak year of 1973 (which produced 33,756), it remains far in excess of Bowen's predicted demand for new faculty.

The implications of these projected trends for graduate education in the arts and sciences seem severe. Diminished opportunities in the academic job market have already discouraged many well-qualified

[2]*Copyrighted, 1982, and reprinted with the permission of the University of Chicago.*

prospective Ph.D. students from pursuing a program of study conceived principally as a preparation for academic careers, and seem likely to continue doing so. The consequent decline in graduate enrollments will jeopardize the continuity and vigor of teaching and research in many fields of knowledge. The impending shortage of positions for junior faculty members will restrict the flow of innovative young scholars into academic life, thereby threatening the creativity and vitality of research and scholarship long after the crisis in enrollment has subsided.

The authors of the University of Chicago report as well as other commentators on the higher education outlook emphasize the possibility of substantial errors in projections of college and university enrollments, and the prospects for faculty employment. The point made continually is that over the years many higher education projections have been far off the mark. Nevertheless, despite this history, it is clear that college and university administrators as well as government agencies, members of legislatures, and other funders of higher education are assuming that the projections for 1982-87, as shown in the charts on the following pages, are substantially accurate. The conclusion that follows nationwide is that a decline in the number of faculty needed (except in the few specialties mentioned above) is inevitable. Under the circumstances, the prudent action is to freeze employment or, in the least stringent circumstances, stop hiring new young people, giving little or no thought about the long-term consequences of such a policy on the quality of the higher education enterprise.

The three charts are from William Bowen's 1981 report[3] as president of Princeton University. Chart I presents Bowen's projections of higher education enrollments to the year 2000; Chart II presents the late Alan M. Cartter's data[4] on openings for junior faculty members, 1948 to 1990 (with the last seven years estimated); and Chart III compares Bowen's 1981 projections of faculty demand with the earlier estimates by Cartter. Published in 1976, Cartter's figures were part of a pioneering analysis of the relationship in academia between job opportunities and job seekers which took into account demographic factors, social

[3]*Bowen, William,* Report of the President — Graduate Education in the Arts and Sciences: Propsects for the Future *(Princeton: Princeton University, 1981).*

[4]*Cartter, Alan M.,* Ph.D.s and the Academic Labor Market, *The Carnegie Commission on Higher Education (New York: McGraw-Hill Book Company, 1976).*

considerations, and the policies of educational institutions. Bowen's more recent projections updated and extended the Cartter analysis.

Although the charts cover three different periods of time, each includes the years 1982-1990. The data show that, during this period, the number of full-time students enrolled in higher education will be substantially lower than in the past, as will be the annual demand for faculty and the number of junior faculty openings each year.

Chart I

Projected Full-Time Enrollments in Higher Education, 1980-2000

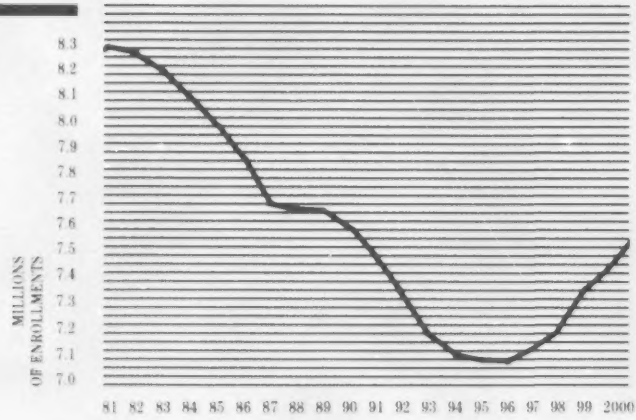
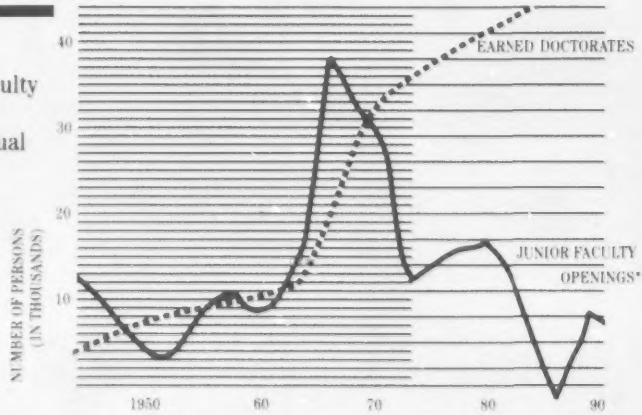


Chart II

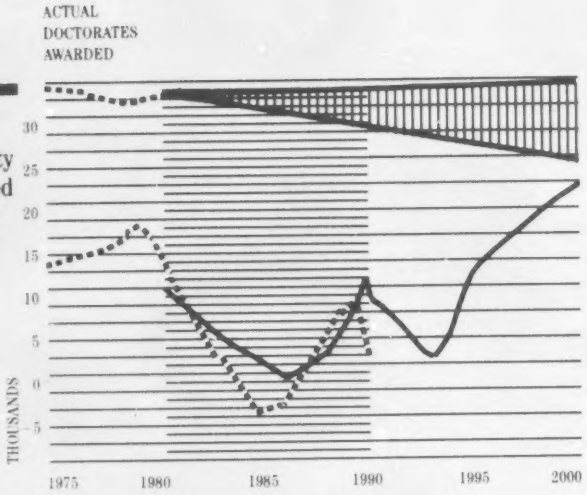
Comparison of Junior Faculty Openings with Earned Doctorates Awarded (Actual 1948-1973, Projected 1974-1990)



*Three-year moving average

Chart III

Bowen's Projections of Faculty Demand, 1981-2000 Compared with Cartter's Projections for 1975-1990



A RANGE OF POSSIBLE NUMBERS OF DOCTORATES AWARDED

CARTTER'S PROJECTION OF DEMAND FOR FACULTY

BOWEN'S PROJECTION OF DEMAND FOR FACULTY

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Reproduced from Princeton University, *President's Report (1981)*, p. 19.

In presenting his analysis of the employment outlook for faculty, President Bowen used the occasion to say that we as a nation "need to make special efforts to increase the likelihood that the most promising young scholars will have opportunities to begin their scholarly careers—the generally depressed conditions that will prevail during the next fifteen years notwithstanding. Fortunately, . . . we can expect there to be at least some openings every year as a result of normal turnover and replacement demands. In addition, the Andrew Mellon Foundation has taken a strong lead in financing a limited number of additional opportunities for the appointment and promotion of young scholars in the humanities. Other efforts of a similar kind can do much to assure the continuity of scholarship and research in all fields of knowledge."

The Academy's handbook has described many of these efforts.

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AED

Academy for
Educational
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The Academy has full-service offices at:

680 Fifth Avenue
New York, NY 10019
(212) 397-0040

1414 Twenty-second Street, N.W.
Washington, D.C. 20037
(202) 862-1900